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ACUTE INFLAMMATORY CONDITIONS OF THE MOUTH AND PHARYNX.[1]

By RAYMOND HENNESSY, M.B., B.S., D.D.Sc. (Melbourne), F.R.C.S. (England and Edinburgh), L.D.S. (Victoria),
Melbourne.

THIS will be essentially a clinical lecture and concerned only with common inflammatory diseases of the mouth and pharynx. I will have nothing to say that is novel or amazing. I will endeavour simply to review the anatomical and pathological principles underlying the surgical conditions that I will describe.

The Jaws.

I propose first to consider the jaws. I would draw your attention to the following fundamental facts about them.

(i.) Each jaw is morphologically and developmentally composed of two distinct parts—the alveolar portion and the body of the bone. The former is dependent for its sole existence upon the presence of the teeth. The latter is an integral part of the facial skeleton. In some creatures these parts of the bone are to be seen as quite distinct units, for example the mandible of the manatee has the alveolar portion in a form of a tube wholly enclosed by the remainder of the bone. Inflammatory processes have certain characteristic features in the alveolus whose histological architecture is that of very modified cancellous bone. Suppuration here is generally very definitely circumscribed.

(ii.) The maxilla is a bone developed in membrane like the bones of the cranial vault. It exhibits the usual characteristics of bone so developed, for example the reparative power after destruction is very slight. The sequestration process is slow and tedious. Syphilis is prone to affect this bone, for example the perforating gumma of the hard palate. Repair is effected entirely by fibrous tissue and no involucrum is formed. The mandible, on the other hand, is a cartilage bone, ectochondral development occurring on Meckel's cartilage. The actual process of ossification resembles that of the

[1] Read at a meeting of the Victorian Branch of the British Medical Association on August 4, 1926.

clavicle rather than the bones of the appendicular skeleton. Its reparative power is very great after destruction by disease or injury and the involucrum formed around the sequestrum may reproduce the whole bone. The mandible is very rarely affected by syphilis.

(iii.) In the maxilla the antrum is quite distinct and apart from the bone. The development of this cavity shows that it is more correctly regarded as part of the nasal and not of the masticating apparatus, that is the jaw itself. The correct conception to have is that the original solid maxillary process which forms the adult bone, remains solid and is built around the expanding antral cavity. Thus there is no hollowing out of the bone. Antral disease, secondary to dental disease, is therefore quite rare. Gross antral disease extremely rarely causes osteomyelitis of the jaw. The lymphatic and vascular systems of both are quite distinct and independent.

(iv.) The deep cervical fascia is attached to the margin of the inferior border of the body of the mandible, but passes over the outer surface of the ascending ramus to the zygoma. Hence dento-alveolar abscesses may come to the surface so as to be deep to the fascia of the neck and so travel along the deep planes of the neck—a condition known as Ludwig's angina.

The following anomalous varieties of dental abscess are seen:

(i.) The abscess which occupies the incisive fossa of the maxilla extending to the inferior margin of the orbit. The lateral incisor is generally the peccant tooth and the infection may be streptococcal. The chemosis of the eye in these cases may be very striking and alarming.

(ii.) The abscess which strips up the muco-periosteum of the hard palate and points at the junction of the hard and soft palate. The infection in these cases usually spreads from the central incisor.

(iii.) The abscess which descends deep to the cervical fascia and causes Ludwig's cellulitis.

It is by no means always easy to tell which is the offending tooth in alveolar abscess. When the infecting organism is the staphylococcus, there is usually no difficulty. But if the infection is streptococcal, the œdema and lymphangitis are very disconcerting, the amount of pus formed is very slight and the offending tooth may not be causing any symptoms. Although toothache may be absent, there is always some tenderness on light percussion. This is the deciding sign as to which tooth should be extracted.

Acute osteomyelitis of both jaws may be classified as follows:

(i.) When there is a wound, accidental or operative.

(ii.) When there is no wound and often not even an injury.

In the second group the infection is blood borne or spreads from adjacent diseased parts, for example, the alveolus.

The commonest clinical variety of postoperative osteomyelitis is that which occurs after extraction of unerupted lower third molars. On account of their submerged position removal of these teeth is not a matter of merely opening the alveolus surrounding the tooth, but also the cancellous spaces of the body of the jaw. Each alveolus is separated from its neighbour and the remainder of the jaw by a layer of compact bone. But if the cancellous bone of the body of the jaw is thrown into communication with the mouth, infection which is inevitable, may easily spread along the whole length of the jaw. I have at present under my care a patient with a condition such as this. The period of treatment extends over many months and several operations are required before recovery is complete.

There is a large, important and common group of suppurative conditions of the jaws due to unerupted teeth quite apart from attempts at removal of these. The question arises: How do these unerupted teeth become infected? It is very generally taught that the microorganisms reach the surrounding tooth follicle by the blood stream. I have long since regarded this as extremely improbable and will venture to suggest to you that it is much more likely that the infection is a direct spread from the mouth. I would remind you that there are several migratory organs in the human body. They develope in one place and then they move to their adult site of function. Such organs are the kidneys which develope in the pelvis and ascend to the loin. The caecum traverses the abdomen from spleen to liver and then descends to the iliac fossa. The testicle wanders from the loin to the scrotum. The teeth move from the tooth follicle in the alveolus which is surrounded by the remainder of the jaw, to a position in the dental arch of the mouth. When any of these organs fail to migrate completely, there is always some developmental anomaly. John Hunter taught that the testicle failed to descend because it was imperfectly developed. What is true of testicles is true of teeth. For example, the tooth which is the occupant of a dentigerous cyst, is also a very imperfectly developed tooth. Now it is important to realize that the teeth are true dermal appendages. All dermal appendages, teeth, hair, nails and glands (sweat, sebaceous and mammary), develope in a precisely similar fashion. From one of the layers of the cutaneous epidermis there appears a solid cylindrical epithelial downgrowth. This downgrowth persists as a duct in the case of the glands and as the tooth band (*Zahn-Leiste* or *gubernaculum dentis*) in the case of a tooth. In both cases the solid downgrowth becomes tubular when its deeper connexion is ready to function. Thus when a tooth should normally begin to move or erupt, the *gubernaculum dentis* will become tubular. If the tooth fails to erupt, it is obvious that there is a direct pathway from the gum surface to the tooth follicle. I have long since regarded these submerged teeth in their follicles as dermoids. All dermoids tend sooner or later to become infected. They do so because they ever retain their

primitive cutaneous connexion. Cutaneous dermoids commonly become enlarged and infected at the age of puberty, when the skin and its derivatives are becoming active. These unerupted teeth cause symptoms most usually about the dates of their normal eruption. Dentigerous cysts are usually discovered between the ages of six and sixteen years.

Suppuration in the Salivary Glands.

I next propose to discuss suppuration in the salivary glands. I would remind you that both parotid and submaxillary salivary glands have some lymphatic glands in very intimate relation with them. It is necessary to distinguish clinically between suppuration in the lymph glands and suppuration in the salivary glands, because the two conditions never seem to go together. This point is readily decided by inspecting the orifice of the duct of the gland in question. When the submaxillary salivary gland is infected, the orifice of Wharton's duct is seen to be red, raised, pouting and perhaps discharging pus. It bears the same relation in this respect to its gland as the ureteric orifice to the kidney. By far the commonest cause of suppuration in this gland is the calculus and, as elsewhere, calculus and sepsis go hand in hand. Indeed most of the symptoms are due to sepsis and not to mechanical blocking. Calculus in the parotid gland is a very rare disease, perhaps because the gland secretes no mucin. The treatment of salivary calculus in the submaxillary duct is to remove the calculus through the duct as this traverses the floor of the mouth. One recurrence of the condition justifies the removal of the gland as the only hope of radical cure. Abscess in the parotid region, whether salivary or lymphatic, is dangerous. Besides other important structures, the duct itself must be carefully avoided when operating in this region. There is no risk of salivary fistula if only gland tissue be injured, but if the larger ducts are damaged, there is every possibility of this. It is better therefore to seek for pus from within the mouth, going through the buccinator muscle to reach the gland and draining into the mouth.

Quinsy.

Quinsy is an abscess around the tonsil which itself may be grossly inflamed or very little affected. The surgical anatomy of quinsy is often imperfectly understood. If one takes a median sagittal section of a head and completely removes the tonsil, there remains the tonsillar fossa. This is somewhat triangular in shape. The pillars of the fauces form anterior and posterior sides. The apex is above and lateral to the converging pillars and to the soft palate. The base is below and formed partly by the tongue. The floor of the fossa is formed by the superior constrictor muscle of the pharynx and very slightly by the internal pterygoid muscle. There is a continuous frill of mucous membrane attached to both the sides and the apex and to that part of the base which is formed by the tongue. This frill of mucous membrane receives two names; at the converging pillars it is called the *plica semilunaris* and at the anterio-inferior angle it is called the *plica triangularis*. Owing to this tissue being redundant in these situations, there are formed two *cul-de-sacs* respectively called the supratonsillar fossa and the infratonsillar fossa. It is extremely important to grasp that these fossæ indicate sites where the abscess may point, but are not the sites of the actual collection of pus itself. The suppuration actually occurs in the areolar tissue mesh which intervenes between the tonsil and the floor and sides of the tonsillar fossa. This areolar tissue is often called the capsule of the tonsil; but it is strictly confined to the deep aspect of the gland. Its *raison-d'être* is similar to that of loose areolar tissue elsewhere in the body, namely to allow for free movement of the parts. This is very obvious in the scalp where the loose areolar tissue plane intervenes between the epicranius muscle and the bony skull. The tonsil, the palate and fauces are in constant movement relative to each other during speaking, swallowing *et cetera*. This areolar tissue is therefore most plentiful in amount around the upper pole of the tonsil and practically non-existent towards the lower or fixed pole. The meshes of this tissue aggregate into a space capable of holding five cubic centimetres of pus. The abscess is therefore external to the tonsil and around the upper pole. Spontaneous evacuation occurs through the supra or infratonsillar fossa or soft palate. The last is the site of election for surgical drainage.

Quinsy is not always easy of diagnosis. I have mistaken quinsy for an ordinary acute tonsillitis, for an alveolar abscess and for a neoplasm of the tonsil. Having diagnosed the fact that the inflammation is around the tonsil, it is necessary to arrive at an opinion as to the presence of pus. If there is definite œdema of the soft palate, pus is certain to be present. Sometimes the affection is bilateral and one side may be more advanced than the other. I have seen both tonsils meeting in the mid-line—a most distressing condition.

The treatment of quinsy is to evacuate the pus. This is one of the easiest operations in surgery and perhaps this is why it is so often badly executed. I have a great prejudice in favour of doing this extremely painful operation under general anæsthesia. It is essential to have a good light. Reflected light from an ordinary frontal mirror is not good. It is better to use a small three and a half volt spotlight worked from a dry cell. A closed screw gag is inserted. Ethyl chloride is dropped on a mask till the patient is unable to continue counting aloud. Then the gag is very slightly opened and an incision in the soft palate with a guarded knife is followed by the introduction of a curved pair of Spencer Wells forceps. The patient coughs the pus out of the abscess cavity. The relief is generally immediate and unspeakable and the operation perfectly painless. I have opened double quinsy in this manner. There are some who recommend that the tonsil be removed and the abscess opened at the same operation. The removal

of the appendix when there is a peritoneal abscess has been suggested as an analogy. I venture to suggest that these two have nothing in common. A closer analogy is a perinephric abscess due to a diseased kidney and in this case the double operation is not favoured by surgeons.

Retropharyngeal Abscess.

There are two distinct types of retropharyngeal abscess. One due to disease of the cervical vertebræ, usually tuberculosis, is a chronic or cold abscess, but may appear quite suddenly. Its anatomical situation is behind the prevertebral fascia. The other is due to suppuration of the buccopharyngeal lymph glands of Henle which are two in number, situated opposite the second and third cervical vertebræ on either side of the middle line and in front of the prevertebral fascia, but behind the buccopharyngeal fascia, that is the fascial covering of the superior constrictor and buccinator muscles. Both these abscesses present as a swelling in the oral pharynx. Both are rare. Both appear under the age of six years and the glandular abscess is usually to one side of the median plane. Both may be associated with lateral flexion of the neck or with torticollis.

In three cases of glandular abscess I failed to make the diagnosis in two. It is a common experience that this condition is overlooked till spontaneous evacuation occurs. The surgical opening of a glandular abscess is a very simple procedure and is performed in the Rose position. The tuberculous abscess is best opened from the neck.

Empyema of the Antrum.

I wish to conclude with some remarks about acute empyema of the maxillary antrum. This condition in my experience is rarely accompanied by a swollen face, unless caused or accompanied by an alveolar abscess. The explanation, I believe, is due to the anatomical considerations I have mentioned about the slight relation of the antrum to the maxilla. The diagnosis of *empyema antri* can be made with certainty only by puncture. I have often been amazed at the crude manner in which some surgeons make proof punctures. A needle is connected with a Higginson's or ear syringe and the forcible washings are collected in a glass dish. The patient splutters and coughs and if pus is recovered, there is no reason whatever to conclude that it came from the antrum and not from the rest of the nasal cavity or other sinuses or the other side of the nose or the pharynx. An ordinary nasal douche would perhaps have given a similar wash. Some surgeons indeed douche the nose carefully before inserting the puncture needle. Even this is not satisfactory. The obvious and simple method is to connect the puncture needle with an aspirating syringe as in *paracentesis thoracis*. For this purpose the Watson-Williams apparatus is very convenient and efficient. Access to the antrum may be through the middle or the inferior meatus. There is less bony resistance in the former situation, but it requires more skill and more care.

MUSCLES.[1]

By J. E. Piper, M.D., Ch.B. (Melbourne),
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Part I.

The Influence of Muscles on Traumatic Joint Injuries (Non-Septic).

In connexion with this lecture I wish to keep to concrete cases and actual results and not to bore you with hypothetical results, obtained from hypothetical cases by hypothetical means, for as Mr. Syme told some of us in a hospital clinic many years ago, "vague generalities are useless."

Injuries of the Upper Limb.

In the sequence of joint injuries I will take those of the upper limb first, beginning with the acromio-clavicular articulation. The first case of dislocation at this joint in this series that I treated, occurred in a Geelong footballer and I might state at this juncture that nearly all the joint injuries that I will discuss tonight, were the result of football injuries. I intend to draw on the experience I obtained as President and Medical Officer of the Geelong Football Club. At the time the dislocation happened, I was the representative for this division on the Council of the Victorian Branch of the British Medical Association and at one of the meetings I asked members there for advice as to the best method of treating this particular injury. Their answers were not encouraging; I was particularly warned against wiring or plating the clavicle to the scapula and advised that if I did not get a good result after one month's treatment by the Jones method, to leave the dislocation alone and urge the patient to make the best of a bad job. However, in course of conversation an old footballer told me that he had had a similar dislocation and that he had eventually cured it by swimming after ineffectual efforts by his doctor.

Taking the cue from this method, I ordered my patient a course of massage, after finding that a four weeks' treatment by the Jones method was unsuccessful. The the result was good and this player took the field again for Geelong before the end of the year.

The next patient after this with a dislocation of the acromial end of the clavicle was a lady who was injured in a car accident. The course of this case was identical with the previous one.

The third of this type of dislocation was in a footballer whose clavicle was driven down under the acromial process. Reduction was a little difficult and this player, against my advice, took the field again in four weeks; but in this case the coraco-clavicular ligament was not torn.

Coming next to the shoulder joint, I wish to refer to one college footballer who had four dislocations of one shoulder and three of the other, with a fractured clavicle for variation. These dislocations were mainly from football injuries. He also underwent a course of massage to the shoulder muscles and since then there has been no recurrence of the trouble. Infantile paralysis reveals to us how

[1] Read at a meeting of the Victorian Branch of the British Medical Association on July 31, 1926.

lax is the shoulder joint when the muscles are paralysed. Of course one would not expect such a good result as the above in the case of severe traumatic dislocation in an adult; but it teaches us that in any operative treatment for dislocation of the shoulder we must rely on the muscles for good results.

About the elbow joint I have nothing new to record. Concerning the condition known as tennis elbow I would class this as a bursitis, similar to those occurring under the deltoid and around the knee. All these are very difficult to treat and the bone setter or the quack often score over the medical practitioner in the treatment of these cases of bursitis. For example, in the case of the deltoid they will rotate the arm and massage the shoulder, breaking down adhesions, telling the patient that there was a small bone out of place in his shoulder which is now replaced, thereby encouraging the patient to use his arm and faith often works miracles in these patients.

I showed you this afternoon a patient suffering from Volkmann's ischæmic paralysis as an illustration of what will happen when you get an anæmia of muscles.

Concerning the wrist joint I wish to refer to a case.

A youth sustained a Colles fracture of his radius playing football on the Geelong oval. This player is now a well-known Davis Cup tennis player and holds all three Australian championships. As it was his tennis arm that was broken, I quote this case as an example of a good anatomical and good functional result.

There is no doubt that in treating these cases of Colles's fracture everything depends on getting a proper reduction of the displaced fragment; if you do not do so, no form of splint will reduce it; if you do, almost any splint will keep it in position.

Injuries of the Lower Limb.

In the lower limb we frequently get a tearing of the ileo-psoas muscle or tendon in footballers and to get a good and speedy result it is necessary to keep the patient with the thigh flexed and slightly everted.

Recently a young lady, at present the holder of two State championships in tennis, complained to me that in walking up a hill or upstairs she "felt her knee give way with her," whereas walking on the level or down hill presented no difficulty. On examination she presented some tenderness in the vicinity of the anterior inferior iliac spine. She stated that she had first felt this tenderness and pain at the end of a strenuous game of tennis. The condition puzzled me and the solution to which I came, was that the patient had injured her ileo-femoral ligament. On looking up the description of the movements of the knee joint in Cunningham's "Text Book of Anatomy" I read the following paragraph: "Since the tibia and the foot are flexed in the act of walking, it is the femur which rotates on the tibia in passing from flexion to extension and *vice versa*; and as relaxation of the ileo-femoral ligament is essential for this rotation, some observers are of the opinion that the body weight falls behind the transverse axis of the knee joint, as in the case of the hip joint, and consequently that extension of the knee joint is maintained by the ileo-femoral ligament, as it is not possible to bend the knee without first having bent the hip joint." If the body weight does fall behind the transverse axis of the knee joint, this is going to be accentuated in walking up hill or up strairs or up any incline, thereby bringing a greater strain on the ileo-femoral ligament. Massage of the surrounding muscle with rest soon cured the condition, though it had been of about five weeks' duration when I saw the patient.

In connexion with bruising of the muscles of the thigh two points are noticeable, first the extent of the primary hæmorrhage and secondly the tendency to recurrence of the hæmorrhage on resumption of muscular activity.

I remember the case of one footballer who was kept in bed for a fortnight, treated with hot air *et cetera* and made to rest for another week. On his first run his thigh became distended to as large a size as in the primary injury by a huge hæmatoma.

I have had similar experiences with injuries in working men.

In the knee we meet with an injury often called "footballer's knee." This injury is characterized by a displacement of one of the semilunar cartilages, nearly always the internal. The fact that it is usually the internal may be due to one or more of the following factors: (i.) The internal cartilage is semilunar, the external circular, the internal is adherent to the capsule. (ii.) The external is not adherent to the capsule, but has the tendon of the popliteus muscle interposed. (iii.) With the patient lying on his back and by grasping the femur in one hand and the tibia in the other, one is able to produce a wider separation of the bones in full extension on the inner side than on the outer in these patients. (iv.) The cartilages glide with the condyles in flexion and extension and as the internal condyle is longer and rotates more than the external, the gliding movement of the internal cartilage must be greater than that of the external. Long experience with footballers has taught me that these cartilages are very seldom displaced as a primary injury (that is displaced for the first occasion) in a man who is in thorough training.

Mr. F. D. Bird, when lecturing to the fifth year men when I was a student, used to relate that he found this displacement occurring frequently in men riding on horseback in the warmer parts of Victoria and of New South Wales, particularly if they were lounging along in the saddle on a hot day. I have found that practically all the displacements of semilunar cartilages in the Geelong team have occurred in men who were playing in the first match of the year without proper training or who were doing their first or second night's training. Once they get fit and once their muscles have been tuned up, this displacement does not occur as a primary injury. I think the big stops in their boots, giving them too firm a grip of the ground, constitute the reason for the commonness of this injury in footballers.

A very common injury around the knee joint is an inflammatory condition of the bone where tendons of muscles have their origin or insertion. This condition is a periostitis, and requires careful treatment. Any jar or strain on the muscles in the

thigh or leg will cause a periostitis of this type instead of a rupture of the muscles themselves. I have never seen the so-called "monkey muscle" injury in a footballer, that is a rupture of the fibres of the plantaris or of the gastrocnemius. This supports the view that this type of injury has some septic condition of the teeth *et cetera* as a predisposing cause.

At the ankle joint we have a common injury known as a sprained ankle. In most cases what has happened is that the external lateral ligament has been torn. It is very seldom that the internal lateral ligament is ruptured, but the tearing of the external lateral is often complicated by a rupture of the anterior annular ligament, thus allowing the tendons of the extensors of the toes and the dorsal flexors of the foot at the ankle joint to jump out of their canals during movement. Now this external lateral ligament has three divisions: an anterior, the shortest, running to the *talus*; a medial, attached distally to the calcaneous; a posterior, the strongest, attached to the *talus*.

It is always or nearly always the first two divisions which are ruptured when the ankle is sprained. The treatment which I adopt, is immediately to make pressure with cold compresses to stop extravasation of blood *et cetera*. Then the ankle is bandaged and strapped with adhesive plaster in such a manner that the strips of plaster take up the duties of the torn divisions of the ligament and further prevent any strain being brought on these divisions while they are healing. The patient is made to walk straight away in a boot for preference or else in a shoe with a good sole. Massage, hot air or diathermy are used at intervals to promote circulation, relieve soreness and hasten repair. The result of this ambulatory method of treatment is that no player that I can remember during the last three years, has been out of action for more than one Saturday at a time with a sprained ankle, no player has broken down on resuming playing and there are no permanently "weak ankles" in the team. Every player who has sprained his ankle, resumes training at the latest on the Thursday week following his injury, that is twelve days after the accident and undergoes a severe night's training. This is a distinct improvement on the results obtained by immobilization by splints, plaster of Paris *et cetera* and is in my opinion due to the fact that the muscles are kept in a state of active tonicity by being exercised and they in their turn take most of the strain off the repairing or repaired ligament.

Conclusion.

In reviewing my experiences with injuries at the acromio-clavicular articulation, at the shoulder, knee and ankle joints, I have been very impressed with the importance of muscles in both preventing and repairing injuries.

If we contrast these joints with the sacro-iliac joint we realize what it means to heal ruptured ligaments without the assistance of muscles. Healing a ruptured ligament at the sacro-iliac joint is a matter of several weeks and needs firm bandaging, often a plaster of Paris jacket. One injury to muscles which is often badly treated, is a rupture of the muscles in the lumbar region. The patient is told to lie in bed and no adequate support is provided for the ruptured muscles, in the absence of which lying on the back only aggravates the condition.

Part II.

Muscles in Relation to General Health and Metabolism.

Acidosis.

When muscles are working, there is a state of acidosis produced in them and in the absence of an adequate oxygen supply we have lactic acid present instead of carbon dioxide. Now the term acidosis is the most indefinite term used in medical literature of recent years. Roughly there are five conditions called by the same name.

First we have acetonuria in which acetone and diacetic acid appear in the urine. The diacetic acid is very unstable and soon breaks down, leaving acetone present in its place, as can be understood from the formula, acetone = $CH_3\ COCH_3$; diacetic acid = $CH_2\ COCH_2\ COOH$. These two bodies are best recognized by the Rothera test which is extremely delicate, reacting at a dilution of 1 in 10,000 of acetone and at 1 in 120,000 of diacetic acid. The ferric perchloride test for diacetic acid is far from delicate. I found failure to react in one specimen of urine which gave 2·6 grammes of diacetic acid estimated as acetone by the Folin method. Rothera originally considered that diacetic acid gave an orange-red colour with nitro prusside. Working in his laboratory I discovered that it really gave a bluer purple than the acetone reaction. I published this result with other work (and also gave Dr. Rothera's explanation of his mistake) in the *Australian Medical Journal* and then the completed work was forwarded to *The Lancet* in August, 1912, where the article was published. On April 16, 1913, a paper covering my work and also claiming to have discovered Dr. Rothera's mistake was published in *The Lancet*. A well known English system of medicine referred to this article and ignored mine. I wrote to the editor and received an apology and an assurance that the matter would be rectified in the next edition. As the alteration of the Rothera test was done in his own laboratory, under his own supervision and as his explanation was published at his request, I am referring to these incidents out of gratitude and respect to the memory of one of the most courteous and most gentlemanly men it was ever my good fortune to meet. In regard to the seriousness of this type of acidosis I may state that in a long series of cases in which the quantity of acetone and diacetic acid present were estimated by the Folin and Messenger Huppert methods, the greatest amount in cases of diabetic coma was 2·6 grammes per litre, whereas in patients after operation, apparently in perfect health and feeling splendid, I obtained a figure as high as 3·6 grammes

per litre. In the prevention of this type of acidosis I found bicarbonate of soda of little value, glucose of moderate value and "Pancreatin" of absolute value, no acetone bodies appearing in the urine when the patient had had "Pancreatin" before operation.

In children we have not merely an acetonuria, but an upsetting of the acid-base equilibrium of the blood. In children there is a natural low level of carbon dioxide tension and hydrogen ion concentration of the blood. Hyperpnœa in a child means acidosis, therefore hyperpnœa means alkaline treatment. In diarrhœa in babies and infants the urine must be made alkaline, if there is any hyperpnœa.

In the third group we estimate the acidosis by the carbon dioxide tension of the alveolar air, by the hydrogen ion concentration of the blood and by the alkali reserve of the blood.

In the fourth group we have cases of nephritis, in which alkalis are of no use.

Finally we have lactic acid production in muscular energy.

This grouping has been done from the clinical standpoint and medical men can form a close estimate of the extent of acidosis present by ascertaining the amount of alkali necessary to render the urine alkaline. In normal persons this amounts to about five grammes a day, but in cases of acidosis it may amount to one hundred grammes *per diem*. During muscular exertion lactic acid forms in the working muscles and is carried by the blood stream through all the muscles of the body and this fact explains why men feel tired and stiff after exercise in muscles which they have not used to any extent during that exercise. It also emphasizes the value of complete rest to patients with myocardial weakness. The concentration of lactic acid is measured by the oxygen debt and this increases in proportion to the violence of the exercise. For example, it was proved in one experiment that a sixty-three kilogram (ten stone) man running at top speed for thirteen seconds produced an oxygen debt of 7·1 litres; in another, a heavier man, running at a slow rate for thirty-three minutes, incurred an oxygen debt of 7·9 litres, while in a third experiment a man "standing running" with violence incurred a debt of 18·7 litres in four minutes.

Neutralization of Lactic Acid.

Now this lactic acid is neutralized in the body in several ways, firstly by alkalis in the muscles which act in the same manner as the buffers in the blood. It is believed that athletes in training increase the amount and disposition of these alkalis.

Secondly, neutralization is brought about by an increased oxygen supply, that is, in running the athlete's respiratory and circulatory centres are stimulated and he absorbs an increased supply of oxygen by breathing two or three times as much air and by the increased pulse rate about three times as much blood is brought into contact with air cells in the lung. Football clubs a few years ago had oxygen cylinders in their dressing rooms, so that players could inhale oxygen at half time, but this served no useful purpose; it is when the muscle is actively working that the extra supply of oxygen is needed.

Thirdly neutralization is helped by oxidizing catalysts in the tissues. The oxidizing faculties of tissues vary in individuals and it is maintained that athletes develope this side of their metabolic functions. Imperfect metabolism and undue excretion of iron may lead to dyspnœa with exercise. During the latter part of the season I watch our men closely and any player showing signs of anæmia is immediately put on iron and arsenic. The pale player is not going to play a good game and I anticipate a time when a match committee will be given the hæmoglobin index of each player when picking the team. It is remarkable how few patients with simple anæmia and chlorosis are to be found in hospitals now in comparison with the records of twenty or thirty years ago. This is undoubtedly the result of girls taking more exercise. Without understanding them the athlete applies these physiological principles to his training methods. The man training for a hundred yards race does not run a hundred yards; he does short, sharp spurts, similarly with the "220 man." The good football coach makes his men do short, sharp work at top speed. If he lets them jog around the field, they will jog on the Saturday; they are not tuned up to do any more. If we inject a vaccine we get a certain amount of antibodies formed; if we inject double the dose, we get roughly double the amount of antibodies. In the experiments mentioned previously we see that a man doing violent exercise for thirteen seconds incurred an oxygen debt of 7·1 litres, while another and bigger man at moderate exercise for thirty-three minutes incurred an oxygen debt of only 7·9 litres. So if a man is to increase the powers of his tissues to neutralize the lactic acid formed on exercise, he must do violent exercise of short duration. Apart from that, football experience teaches us something more. A properly trained football team feels thoroughly fit and in football phraseology they are spoken of as "jumping out of their skin" with a feeling of fitness. So really there must be a hormone formed by muscular exertion and proper training consists in charging a man in a similar manner to that in which a battery is charged with electrical energy. The antithesis of the well trained athlete is the neurasthenic, that is the genuine neurasthenic manifesting vasomotor weakness. I prescribe walking for my neurasthenics, but I find it almost impossible to get them to do it. If they would do so I believe that the greater number of them would be relieved of their symptoms. As a man gets older he has to give up violent exercise and to charge up his battery by simpler methods. Walking and deep breathing are the substitutes for the running and rapid breathing of the athlete. By these methods we get peripheral vasodilatation and elimination of carbon dioxide. We have evidences of the value of deep breathing exercises all around us. I will

recall to your minds the magnificent chest development of all the great singers of the world, the only exception being perhaps Galli-Curci. These artists themselves claim that this chest development is the result of deep breathing exercises necessary to their education as singers. Note the wonderful chest development in a child during the twelve months following an operation for the removal of post-nasal growths, more particularly when the parents see that the child carries out proper breathing exercises. Read the life history of Sandow and see how he developed himself from a weakling into the world's famous strong man.

The second muscle in the body in regard to greatness is the diaphragm. The use of this muscle is strongly advocated by the best specialists in preventing and controlling hyperpiesis. One of these authorities states that deep excursions of the diaphragm help venous and lymphatic flow, compress the heart and blood vessels and lower blood pressure, replace carbon dioxide by oxygen, thus lessening cyanosis and dyspnœa and promoting peripheral vasodilatation.

Lastly we come to the greatest muscle of all, the heart. In training the athlete is educating his heart to stand strains and this strain can be enormous. Physiologists tell us that in an athlete at full speed the heart is pumping out fifteen to eighteen gallons of blood each minute, depending of course on the size of the man. If you empty a tin of petrol into the tank of your motor car in fifteen seconds you get an idea of the size of the stream of blood gushing out of the heart in one minute. This is the great reason why an athlete should not exert himself unduly after an illness and ordinary people want to be careful after having high temperatures. The weakened heart muscle will not stand the strain.

I saw a fine footballer ruined for a whole season three years ago by being allowed a play in a match when he was just recovering from an attack of influenza. For several months afterwards any moderate exertion would bring on severe dyspnœa. Another Geelong player this year persisted in playing in a match against my orders and was the worst player on the ground.

The coronary arteries are of supreme importance to the athlete as to the individual. It is estimated that two quarts of blood pass through the coronaries of an athlete during severe exercise every minute. In fact a man's capacity for exercise is supposed to depend on the state of his coronary arteries. That is why severe exercise has a definite age limit. The three most violent exercises are football, foot running and boxing. A man of thirty is too old for these sports. The greater part of the heart's energy is spent in distending the walls of the arteries and the loss of elasticity of these vessels, together with an increase in blood pressure, is too severe a handicap for the heart to carry. Now why cannot we apply the lessons we have learned in exercising and rendering fit the voluntary muscles to the muscles of the arteries. Can we not exercise them and keep them fit. Over superficial areas we can cause alternate vasodilatation and vasoconstriction by the alternate application of heat and cold. Will diathermy and high frequency similarly exercise the muscles of the vessels deep in the body? If so, then the muscles of the blood vessels can be kept as much under control as the muscles of a footballer. The study of our footballer enables us to understand better the problems of anæsthesia, particularly the danger of a struggling stage. The increased pulse rate of itself means a big increase in the absorption of the anæsthesic, add to that the extra amount absorbed owing to the increased respiratory rate and then remember the colossal output of the heart during violent exertion. It is easy then to realize the danger.

Diet in Athletes.

Finally I wish to speak of diet in athletes. According to reports the vegetarians truimphed at the last Olympic games. Nurmi and the other Finland runners are strict vegetarians. The outstanding cyclist in Victoria at present is a vegetarian. Our studies of acidosis help us to understand why an alkaline diet is advantageous and why a fatty diet is the reverse. Fresh fruit and fruit juices and fresh green vegetables are now advocated universally in cases of hyperpiesis so as to neutralize the acidosis and diminish the toxæmia in the blood.

Conclusion.

I wish now to thank you for your patient hearing and the members of my division for giving me the privilege of speaking to you this evening.

THE POSITION OF PUBLIC HOSPITALS IN RELATION TO THE MEDICAL PROFESSION.[1]

By A. E. Brown, M.R.C.S. (Eng.), L.R.C.P. (Lond.), M.B., Ch.B. (Cantab.),
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I believe that the present position of the charitable principle in relation to hospital maintenance and medical services is anomalous, absurd and inefficient and that it should be no longer supported nor tolerated by either the medical profession or the charitably minded public.

My reasons for this opinion are as follows.

Present Extent of the Charitable Principle.

My first reason is the extent to which the charitable principle has grown. I speak mainly for the country districts, both because I am acquainted only with conditions in the country and because the country districts offer a very complete and easily analysable example of the conditions obtaining.

May I cite my own district as an example of what I believe to be typical of the state of things in the country generally. This district has a population of about fifteen thousand, of whom about five

[1] Read at a meeting of the Victorian Branch of the British Medical Association on July 31, 1926.

thousand live in the town and the remainder in the surrounding country. It claims and I think justly to be as prosperous as any in the Commonwealth. There is no large industrial population, the only industries being a large butter factory and the railway yards. The country people are for the most part dairy farmers and onion growers, with a fair sprinkling of soldier settlers. Some seven hundred to eight hundred families have made medical provision for themselves through the various lodges. The charges of the two private hospitals in the town do not exceed five guineas a week and are generally four and a half. It is a district in which one would imagine there would be very little demand for charity of any description. Yet no less than seven hundred people a year are admitted to the public hospital, treated as charitable cases by the doctors and maintained by the charity of the people of the district. This is an average of about one in every twenty-one of the residents of the district or, reckoning the average family to consist of three persons, one family out of every seven sends a patient to the charitable hospital every year. The total number of patients admitted during the year to the public hospital was 650 and to the two private hospitals combined 300. These figures do not include those for maternity cases or for patients with infective diseases, there being no public accommodation for the former and no private accommodation for the latter. The figures show therefore that of every three patients seeking hospital accommodation and treatment two go to the public hospital under the *Charities Act* and one pays for treatment. The average payment made by patients for their maintenance at the public hospital is fifteen shillings a week, the weekly cost per patient being two pounds six shillings and eight pence. The difference is, of course, made up by voluntary subscriptions and government and municipal grants. No patients of course pay a penny for medical or surgical treatment. Eighty-two were submitted for major surgery, and the remainder comprise all others suffering from conditions requiring medical and surgical treatment. The average length of stay was nineteen days. If the operations are reckoned at ten pounds and the treatment of all other cases at one pound weekly all round per patient, the four medical officers on the staff of the hospital are making a contribution in work equal to two thousand pounds a year.

It is difficult in the face of these figures to avoid the conclusion that hospital charity has grown to very unhealthy proportions.

In viewing the position our attention is forced on the fact that the original intention of charity in regard to medical services is a dead letter and this not only with the consent of, but directly by force of public opinion. Private hospitals have become generally regarded not as the usual channel of treatment of all but the very poor, but as luxuries for the very rich or at any rate for the very comfortably off. Any hospital committee which tried to limit its admissions to the really destitute poor, could not live, but would find itself up against an irresistible body of public opinion. It is a natural result of the evolution of the charitable principle along normal lines and has as a further effect the fact that those who do not make use of the public hospitals, have to pay more for their treatment and that therefore fewer of them are able to afford it and more and more are forced into the public hospital. It is not an economic state and does not conduce to general good feeling. It is the cause of friction in triangular form between doctors, committees and the public and is an absolute distortion of the word charity.

There are many people whose pride and principle will make them refuse the aid of the charitable hospitals even at the cost of some sacrifice to themselves. When they see their neighbours getting free treatment in the public hospitals, the same treatment for which they and their families have paid with some inconvenience, they cannot help feeling at a disadvantage. And along with that feeling comes involuntarily the sense that they have been good to their doctor in paying him and that he owes them gratitude, as indeed he does, rather than that those who accept free treatment, owe gratitude to the doctors who give it. Free service has become so much regarded as a matter of course that any sense of obligation in the matter is quite rare, though not, I am glad to say, yet quite lost. The majority of public hospital patients are very quick and free in their complaints, should they find the doctors any less instant in their attention to them than they are to their private patients. The middle class public, in the country at any rate, have come to look on medical service as laid on in the hospitals like the gas and water and they feel no more gratitude to the doctor who supplies the one than to the tap which supplies the other. I am not alluding throughout this paper to the cases of definite imposition of which a few will occur in any organization however well regulated, nor to the destitute poor for whom the hospitals were originally intended, but to the everyday cases, families on fair wages or farmers not yet fully established who make up two-thirds of the admissions to the country hospitals.

I do not believe that this overgrown demand for free medical treatment is the result of any real financial necessity. I believe it to be the result of the state of mind produced by the very provision of the facilities themselves. And in illustration I would instance the different attitudes adopted by the public towards maternity and towards infectious disease.

There is no public provision made in this town for maternity cases. The nursing charges range from two and a half guineas in the midwives' homes to five guineas in the private hospitals weekly. The medical fees are four guineas which themselves absorb the maternity allowance, yet there is no

difficulty found in paying these charges by the vast majority of patients. Furthermore fully 50% of them seek the private hospitals as against the cheaper midwives' homes, while in non-maternity conditions where the public hospital is waiting for them only 30% go to private hospitals and the other 70% pay only fifteen shillings a week as against two and a half to four guineas the maternity patients pay when they seek the cheaper nursing.

Contrast the attitude of patients with infectious diseases who must go to the infectious diseases hospital which is under the control of and generally regarded as part of the public hospital. Fifty patients were admitted last year and their total stay in weeks was two hundred and thirty-two. Assuming that in all cases the patient is responsible only for the time of actual treatment and the local health authorities for the period of isolation and quarantine, we can say that the stay in hospital apart from the quarantine is in all cases two weeks (a conservative enough estimate when one considers the possibilities of complication in scarlet fever). The total payments made to the hospital maintenance funds by these patients was fifty-six pounds or roughly ten shillings a week or actually five shillings a week less than the payments in the genuinely charitable wards of the institution. These are in the main not patients requiring charity at all. Many of them are decidedly well to do. But because the infectious wards are attached to the public hospital with its implied charitable principle, they object to paying more and have no hesitation in saying so.

Another fact supporting my contention that the demands on the charitable hospitals are not proportionate to the financial necessities of the case is that of the large sums paid by many public hospital patients to Chinese and other herbalists. I can cite two cases personally, though of course definite knowledge comes to us only in exceptional cases.

A woman received medical and surgical treatment free including many weeks altogether and paid only ten shillings weekly for her maintenance. Her family told me later and she confirmed it that she had paid to a Chinese thirty guineas for the treatment of asthma in between her visits to the hospital and had arranged to pay him another fifty for the "dispersal" of a non-existent tumour. A man who was in the hospital for three months told me some six months later that since he had left the hospital he had paid no less than one hundred and four pounds to a herbalist for treatment.

The large charitable hospitals have a very definite effect on the private practices of the doctors serving them. It is our experience and I am sure it is that of most other men where there is a public hospital in competition with them, that patients use it quite openly as a means of bargaining for lower fees. It is an everyday experience for us to be told more or less openly that unless we agree to charge less than the usual fees, the patient will go to the public hospital and go they do. It is useless to expect the committees to block them. Public opinion is behind the patients. And further even were the committee not themselves influenced by in fact a part of public opinion, the individual committeemen have their own business and personal relationships with the patients and have a natural bias in favour of showing them generosity.

Also most of us feel that it is not a very dignified position for us, when we have to go to a hospital secretary and ask him to scrutinize patients and send them away from the hospital for our monetary advantage. It is a very salutary thing that there should be a check on medical and private hospital fees, but it is a galling thing to think that it is our own gratuitous charitable work which is being used against us to curtail our livelihood. I am of opinion that doctors are in the main well paid. We have not perhaps the opportunities of making big fortunes such as are made by men in business and such as would probably be made by many of us did we put into business the thought and energy which we now put into our practices. But we do now make at least as much as we should have any hope of making under any conceivable form of national health service with its set salaries. I do not think further that the enlarging of doctors' incomes should be used as an argument against the charitable principle and it would certainly not meet with any sympathy from the public. But it is the present huge system of charitable duty which makes us depend on high private fees for the maintenance of the standards we require, and those same charitable duties should not be used as a lever to force the fees down. They do force them down of course. We offer "intermediate" fees freely in our private hospitals, because it pays better to work for half fees than to do the same work for nothing in the public hospitals. And our private hospital charges have to be kept down to a level which any business man would consider absurd. Of the two private hospitals last year one made a profit of twenty-five pounds, the other a loss of forty-four pounds. In our own case at any rate that amount did not include any allowance for depreciation or interest on capital. An auditor going over our books would probably call the result a loss of three hundred pounds or more. Any attempt to raise charges to a business level would at once result in further admissions to the public hospital and a further increase of totally unpaid work.

The overgrowth of the charitable principle has also a definite effect on the general public and this is well shown in their slowness of response to the constant almost wearisome appeals for money. I feel sure that this slowness is due to the fact that the original human call of the appeals, namely help for the destitute, is no longer felt. Public recognition of the fact that all but the well to do have the right to be treated and maintained at these

hospitals, has not only caused a large increase in the use of them, but has also prevented the appeals from touching the sympathies of the public and from loosening their purse strings. The struggles of those of the committeemen who take their duties seriously, are truly heroic. Instancing our own hospital again, it started the year with an overdraft of eight hundred and ninety pounds. Really admirable and strenuous efforts were made throughout the year to raise money to reduce this, but none the less it ended the year with an overdraft of eleven hundred pounds. The efforts are continuing and as far as I can see, will be eternal unless the system is in some way altered.

Waste and Inefficiency.

Secondly, the principle involves waste and inefficiency. Again my own town must furnish the text. It is a good example of a small town, well equipped medically. There are three fully equipped hospitals, requiring of course three staffs and three matrons. Of these only one, the public hospital, is large enough to be a training school for nurses. The six or seven probationers in the other two hospitals are wasting their time, as far as training for their profession goes. At the same time the public hospital is not large enough to come under the three year training scheme of the *Nurses' Registration Act* and in addition to the increased difficulty of obtaining good nurses to train because of this, those who do train there, have to spend a year longer than they would were the hospital larger.

There are three X ray plants, where there might be one larger and more widely efficient. There is one pathological laboratory attached to one of the private hospitals. It serves this hospital fully of course, but the other two do not get anything like full service from it. There is a certificated masseuse who has established an expensive equipment privately which is of course not available for public hospital patients. Every important piece of equipment has to be duplicated or triplicated if it is not to be limited in its application.

The capital cost of the two private hospitals combined is about ten thousand pounds, and their total bed space is twenty-six, of which ten are for maternity patients. Their combined cost of upkeep is four thousand pounds yearly and as that of the public hospital is approximately the same amount, the total cost of hospital maintenance in this small town is eight thousand pounds a year. It is quite obvious that a much better service to the public could be provided for this large sum of money. For Colac on a small scale read Melbourne on a larger one and extend the calculation to the whole State and it becomes clear how greatly the present hospital system is hampering the development of an efficient medical service to the public.

We doctors further are quite unable to get behind the public hospitals and make them what they should and could be made, while they are in open competition with us for our livelihood. And when they try or rather if they should try to get out of competition and restrict their services to the really destitute poor, their large and efficient equipment would be far restricted from being fully utilized. Also the only way in which proper provision could be made for the large numbers debarred from using them would be by great extension of the private hospitals or by the creation of a large number of new "intermediate" institutions, either alternative involving diffusion of services and comparative increase of expenses.

I have laid stress, perhaps at too great length, on matters which most medical men will regard as obvious. But my reason for doing so is that the medical profession seems to be slower than the general public in recognizing the faults of the present system and in trying to get it altered. The system must be altered. It will be altered. The alterations are as a matter of fact rapidly approaching and some of them are already under way. It is my grave fear that these alterations when they come will be evolved by the lay public and the Government and by them imposed on us with such modifications as this Association feels itself strong enough to wring from them. I would rather wish to see them considered and built up by the medical profession itself which is the body in the country most naturally fitted to organize and build up an efficient medical service.

Take for instance the question of intermediate hospitals which is at present exercising the minds of the public, the Charities Board and the various hospital committees. This is a matter of very great importance, affecting the whole future medical organization of the country. No authoritative statement has been made to the public by the Victorian Branch of the British Medical Association. It has expressed no opinion on the matter, has not in fact been asked to do so, has got no standing whatever in the movement. It is "watching" a most important movement which it should itself have either initiated or condemned. It has stated to itself certain requirements which it regards as essential to the interests of its members before accepting the scheme whatever it may eventually be. These requirements are probably so widely divergent from what will be suggested by the other parties interested that bargainings and conferences and mutual concessions will be necessary and finally the Branch will accept in a modified form a lay scheme for improvement in medical service, instead of submitting to the lay public a medical scheme.

This particular improvement will be followed by others more or less important. They will be for the most part at best piecemeal improvements and at worst retrograde movements. But all will be imposed on us from outside and by us grudgingly accepted, until the Branch will have neither credit nor influence in the final medical organization of the country, except such influence as a trade union has by virtue of its power of bargaining for better terms and conditions for its members. I cannot

feel that this Branch will be fulfilling its real destiny if it falls into that position.

Is it necessary that all these plans should be formed outside the profession? Can we not ourselves plan and evolve some scheme whereby we shall get back into sympathy with the public, render better service to the community and still be free from the irritations of government service? If we did evolve a plan of real service to the public, I do not think that we need have any doubt that they would accept it and leave the running of it to us. But if we will not do that, I do not blame them for recognizing that it must be done by someone and for trying to do it themselves. Are we afraid to seek the basic causes of our medico-social disorders in the same uncompromising way in which it is our boast that we seek for the causes of bodily illness?

We shall be as far from getting good results in the one case as in the other if we confine ourselves to empirical remedies and hesitate to submit every accepted theory to the most searching tests we can devise. None of us need fear the loss of financial security half as much in working out a plan for ourselves as in facing a scheme worked out for us by those who start with the hypothesis that doctors are already overpaid.

The Remedy.

All this is of course very well and comes under the easy head of criticism. It is a very different matter to suggest a solution. I do not consider myself to be competent to lay down the law generally in the matter, but the only way in which the leaders of our profession can work with effect is with the interest and help of the rank and file. And therefore as one of the latter I am prepared to make my suggestion in regard to one aspect of our medico-social problems, that of the hospitals, and if my colleagues of the rank and file will take the trouble to tear it to pieces and substitute better, all will be gain and no loss.

Self-Supporting Hospitals.

The first thing to do is to work for the abolition of the charitable hospital as such altogether and instead strive to see all hospitals established on as firm a self-supporting basis as possible, with the provision of such charitable beds as are absolutely necessary. This cannot be done by building more hospitals, but by enlarging the big ones and reducing the total number of separate institutions as much as possible. The charitable beds should be absolutely free to the truly necessitous patient, with no medical or maintenance charges whatever. Their cost should be met from the revenue from the paying beds as much as possible and the balance made up by municipal rather than government or private subscriptions. No more of these moving appeals to the public for aid should be allowed. Alongside this, work for the discouragement of the private hospitals which are in the main less well equipped and less efficient than the public hospitals. The congregation of more patients under the one roof and management does lead to economy of administration and does offer some hope of reducing hospital fees. The professional advantages of such a medical centre in each district with its closer contact between doctors, the greater possibilities of supervision of each other's work and the consequent transference of grounds of rivalry from those of finance to those of sheer professional efficiency are, I think, sufficiently obvious to need no further emphasis.

Moderate Fees.

The second aim should be to make medical fees more nearly correspond to the means of those who have to pay them. I said earlier that private hospitals are generally regarded as luxuries for the rich and I am afraid that that idea is to a certain extent justified. The reason of course is obvious. We do so much work for nothing that those who can pay, have to pay more. No one can put a money value on a life-saving operation. No payment is too much for life-saving skill. But there is a very evident fallacy in putting the cash value of medical and surgical treatment so high that the great majority of people cannot afford to pay for it and the profession has therefore to make a grand charitable gesture and do the work for nothing.

It may seem an absurdity to compare the value of a surgical operation with that of a suit of clothes; but it is sheer economic fact that makes the tailor keep the price of his suits down to a level at which the greatest possible number of people can buy them. If we are to retain our own economic independence we must recognize the same economic fact and offer services at a money price at which a far greater number of people will be able to employ us independently of charity or the government. There will always be many who cannot pay anything, however little we ask and these we will always treat freely and gladly as in the past. There will always be many too who can afford to pay something more nearly related to the true value of our services. But the mass of our population is made up of small salaried families, wage earners, young folk starting out in the battle to carve out businesses and old folk retired on a modest income and these should not be asked to pay too high a fee, nor allowed to claim our services free. Many of them do both at present.

To come down to the absolute facts of the case: We should insist on the public hospitals being opened to all classes of patients in the community and we should insist on our right to charge all but the really necessitous, moderate fees. And we must, if we are going to do this, be prepared to offer to the large masses of people round us not the rich and not the destitute our services at a price they can pay without crippling themselves.

There is no reason why this should not be done at once by us. At any rate, whether at once or later, let it be done by us ourselves and let us not sit idly by and see ourselves forced to do something worse by others.

RADIOGRAPHIC DIAGNOSIS IN OBSTETRIC PRACTICE.[1]

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With the exception of obstetric practice, radiology is now employed regularly in practically every branch of medicine. Apart from its more obvious advantages in fractures and lesions of bones and joints, no gastro-intestinal examination is complete without the investigation of the behaviour of an opaque meal, nor can a satisfactory diagnosis of urinary conditions be made without proper pyelographic examination. There are many physicians, too, who regard X ray examination of the chest as essential for the study of every intrathoracic lesion, whether pulmonary, cardiac or otherwise. Even the neurologist and brain surgeon recently are calling in the aid of radiography for the elucidation of their problems by such very special measures as intrathecal injection of "Lipiodol" and pneumoventriculography. Dental examination is useful not alone to the dentist, but likewise to the physician who recognizes that many serious disturbances originate from the teeth. The rhinologist, otologist and orthopædist likewise very frequently depend upon the skiagram for assistance in diagnosis. Just as an opaque meal has lessened the incidence of exploratory laparatomy, pyelography that of exploratory nephrotomy and X ray examination of the head and chest that of exploratory trephining and paracentesis, so it is likely that timely X ray examination of the pregnant woman, when indicated, will now and then obviate such hazardous risks as Cæsarean section and other dangerous obstetric procedures.

In spite of the extensive use to which it has thus been put in other branches of medicine, midwives still fail to take advantage of X ray examination. In Victoria, for instance, no institution which specially caters for obstetric work has yet any X ray equipment whatever, although at the Women's Hospital a building which will accommodate a new X ray department, is in course of erection. Even in general work it is extremely rare for any obstetrician to take advantage of radiography to assist him in his work. With one exception, I know of no practitioner in this city who regularly uses X rays, even in specially selected cases, where such may be found to be useful. As long ago as 1899 Müllerheim[1] examined women by X rays with partial success. In 1917 appeared the classical work on the *fœtus in utero* by Warnekros,[2] of Berlin. Horner[3] reported that "today (1921) in all parts of the civilized world extensive rœntgenographic investigations during pregnancy are being made."

That very great local interest is shown in an attempt to improve obstetric methods is evidenced by the recent appointment of a Director of Obstetrical Research at the Melbourne University and by the award of a prize by the Melbourne Permanent Committee for Post-Graduate Work for the best paper bearing on obstetric problems. The prize essayist,[4] however, does not appear to have made any reference whatever to the need of X rays in diagnosis. What, then is the reason for the usual failure to employ radiographic methods? I believe this may be put down to two principal causes: (i.) The belief held by many practitioners that X ray exposure is harmful to the developing fœtus and reproductive organs. This belief in many cases is probably shared by the patients themselves. (ii.) Lack of appreciation of the value of such examinations.

It is well known, for instance, that X rays have a considerable influence upon the ovary and that sterility is produced by such means, for instance in the treatment of fibroid growths of the uterus frequently a sterilizing or castration dose reaches the ovary. This is, however, only done by relatively large doses by what is known as a sterilizing or castration dose and is equivalent to one-third of an erythema dose to the skin. The sterilizing dose involves an exposure of many minutes or even hours depending upon the strength of the current and penetration employed. It exceeds the largest dose ever required for diagnostic purposes very many times. There is, therefore, no possible justification to condemn diagnostic procedures because of the possible effects upon the ovaries. As a matter of fact X ray diagnosis is very frequently undertaken for such conditions as tuberculous and other lesions of the hips, sacrum *et cetera* in young girls and women of every age without any effect whatever having been produced upon the ovarian function or upon menstruation.

With regard to the effect upon the developing fœtus itself, much prominence has been given to the results of irradiation of developing embryos in animal experimentation studies. Various monstrosities which may even be transmitted to offspring have been described, but these have invariably been produced by enormous doses, often several times that of an erythema dose.

Numerous reports are given in the literature of effective treatment of fibroid growths of the uterus when subsequently pregnancy has taken place and when the pregnancy terminated in the birth of a normal and healthy child, both physically and mentally. For instance Werner[5] reports that despite very large doses given to fifteen hundred women for metrorrhagia or myomata, seventeen subsequently became pregnant, several repeatedly, resulting in twenty-four cases of pregnancy. Fourteen of these were normal births. Steiger[6] reports pregnancy after X ray treatment of a fibroid reaching almost to the umbilicus in a woman of thirty-nine years of age after four months' amenorrhœa. In this instance a normal four kilogram (nine pound) child was born; it was well and strong one year after birth. He cites a case of Pankow resulting in the birth of a child after eighteen months' amenorrhœa. Three years after birth the child was undernourished, but this might have been due to war

[1] Read at a meeting of the Obstetrical and Gynæcological Section of the Victorian Branch of the British Medical Association on May 27, 1926.

conditions. Heiman[7] had a patient, forty-three years of age, who after radiation for oligomenorrhœa gave birth to a child who was well and strong at the age of three years.

Even in the treatment of carcinoma of the pregnant uterus by means of radium cases have been described in which the pregnancy has terminated in the birth of normal, healthy children. Very large doses need to be given to control any malignancy, much larger, in fact, than is necessary for the treatment of a fibroid. Dr. Albert Hughes states that after a dose of three hundred milligramme hours in the cervix, a patient of his gave birth to a normal, healthy male child eleven months later, although she had not, previous to irradiation, been pregnant for twelve years. Pamberton[8] describes the birth of a child after the application of six hundred milligramme hours of radium, the child was alive and well at the age of two and a half years. Many other similar cases are recorded in the literature.

I have purposely mentioned at great length the possible effect of large doses very many times greater than is legitimately employed for diagnostic purposes, as I am convinced that this is the chief bogey to be overcome. Just as it would be manifestly unfair to condemn the use of, say "twilight sleep" because very large doses of scopolamine and morphine would be disastrous to both mother and child, so would it be unfair to discourage or fail to take advantage of this diagnostic procedure, because a dose very many times greater than that used for this purpose may be harmful.

I do not propose to suggest that every pregnant woman should be advised to undergo X ray examination, although it may ultimately become the practice to do so. It would require a very great improvement upon present methods of radiography to justify such a routine procedure. I will merely seek to show that there must be many occasions in which such procedures are of the greatest value alike to mother and child and are calculated to lessen appreciably the risks of maternity. No doubt as radiologists and obstetricians gain more experience and with improvements in technique this method of diagnosis will become increasingly more useful.

Perhaps the most frequent use to which X rays are put in this way is the diagnosis of pregnancy itself. The fœtus can rarely be discerned before the onset of quickening, that is about four and a half months after the onset of conception. Usually other methods are available to determine this point, but despite exhaustive examination by the ordinary clinical means there will still remain a few cases in which doubt exists as late as the fifth month or even later, such for example as pseudocyesis. Other conditions such as fibroids, enlarged spleen *et cetera* may be complicated by pregnancy which may be particularly difficult to diagnose without X ray examination. Likewise in treatment of such conditions as fibroids, splenomedullary leuchæmia *et cetera* by radiation it is most important that the presence or absence of pregnancy be definitely ascertained. The discovery of an unsuspected pregnancy at operation for myomectomy or hysterectomy may place the surgeon in an awkward position, just as much as a supposed case of pregnancy which was later on shown to be a fibroid. F. A. Nyulasy mentions an instance of a uterus enlarged to the size of a seven months' pregnancy in which the diagnosis was in doubt even up to the time of the *post mortem* examination, until the uterus itself was actually opened. It was found to be due to a fibroid. Previous X ray examination could not be done. The existence of the shadow of the bony centres in the vertebral column in the fœtus is incontrovertible evidence of pregnancy and may even be of very definite medico-legal value.

The presence of such abnormality as twins or other multiple pregnancy may be established with absolute certainty at an earlier date by means of X rays than by any other method. Monstrosities, more particularly anencephaly and hydrocephaly can likewise be determined and the information thus gained will be of considerable value in the management of the case. Doub[9] reports seven cases of anencephaly, four of which were diagnosed radiologically before delivery. Associated *spina bifida* in one of these was likewise diagnosed. Spangler[10] met with an instance of anencephaly in a case complicated with toxæmia, which left no doubt whatever as to what the proper course of treatment should be.

Ectopic pregnancy has been discovered by these means as early as 1913 by Sjorgren and recently Acomb and Candy[11] demonstrated skiagrams diagnosed as full time ovarian pregnancy, the diagnosis of which was subsequently verified at operation.

Chamberlain and Newell[12] have devised a stereoscopic method of pelvimetry, which is considerably more accurate than the ordinary rough clinical methods. This is based upon a few simple geometrical principles and has led to excellent results. Fœtometry which is scarcely possible by other means can likewise be performed so that the relationship of the sizes of the different diameters of the fœtal head to those of the pelvis can be ascertained. Incidentally an unsuspected bony obstruction to delivery such as might be caused by exostosis, an old sacroiliac injury, callus from a pubiotomy *et cetera* may be recognized. Of two hundred and fifty patients seen by Horner as the result of measurements from skiagrams six were considered to have fœtuses too large for delivery in the usual way and were submitted to Cæsarean section.

It would appear desirable that except in cases of urgency no surgeon should submit a patient to the ordeal of a Cæsarean section without making sure by radiographic means that the child is viable unless delivery *per vias naturales* is impossible or too hazardous. A surgeon is not, for instance, justified in performing Cæsarean section to extract an anencephalic fœtus or other hopeless monstrosity, if delivery perhaps before full time can be safely accomplished by other means at an early stage of gestation. The X ray exposure no more prejudices the success of this operation than in the many other surgical procedures frequently following X ray examination in other parts of the body.

Jacobs[13] has described a case of obliquely contracted pelvis in which the fœtal head could not be manipulated into the pelvis even under anæsthesia. Although obliquely contracted pelvis had been suspected, external measurements suggested by Naegele or a test for asymmetry proved of no assistance. Skiagrams, however, revealed definite evidence of an obliquely contracted pelvis.

The presence of a dead or perhaps macerated fœtus has been determined by the overriding of the bones of the skull and by the asymmetry of the head. I am indebted to Dr. Hubert Jacobs for a skiagram showing a dead fœtal head *in situ*, the parietal bones are seen depressed much below the level of the occipital and frontal bones. Death was estimated to have occurred about the thirtieth week. The mother was a diabetic twenty-six-para who did not present any symptoms of fœtal death. A macerated fœtus was delivered after induction of labour by Watson's technique. Failure to grow in the intervals between two successive exposures would indicate the same condition.

Horner gives numerous unusual conditions as the following, which I quote from his article:

> The presence of foreign bodies in the generative organs is easily determined. This statement, when applied to obstetrics, may appear rather peculiar. But catheters, bougies and pessaries used in various minor operative procedures have been lost or forgotten. A Y-shaped brass pessary was recently located in a freshly delivered placenta by one of my colleagues. The patient, when questioned concerning it, denied all knowledge of its existence. Unfortunately in this instance no rœntgenograph was taken. Discovery might have created a knotty problem. A similar instrument was located in the *fundus uteri* of an amenorrhœic stout woman whose physician had inserted it as a cure for sterility. A rœntgenograph revealed it although she had supposed it removed years ago. Its removal was followed by pregnancy which might never have occurred without the rœntgenogram.

The value of pyelography in the management of pyelitis has been well demonstrated recently by Butler[14] who points out that by this means deformities and infections of the urinary tract in pregnant women are easy to diagnose. Careful prenatal study of cases will disclose the disease early. Of course, proper study of the urine will give the first clue.

After delivery of the child how frequently are serious injuries to the bones especially after difficult labour overlooked? By X ray investigation fractures of the limbs might be recognized at once and treatment instituted. Fractures of the skull are not so easily recognized.

If these brief notes succeed in dispelling the bogey of the mischief done by X rays in doses such as are employed in diagnosis and lead to a greater appreciation of its value in the sphere of obstetrics, they will not have been written in vain. The best results can be expected only with the fullest cooperation of radiologist and obstetrician and there is no doubt a very great unexplored field yet to be reached with improved technique towards lessening the perils of the pregnant woman and her child. It is to be hoped that after the building and equipment of the new X ray block at the Women's Hospital are completed, the use of X rays will become a much more important feature in the management of pregnancy in this State than it has been in the past.

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A STANDARD OF WEIGHT FOR AUSTRALIAN INFANTS.[1]

By Robert Southby, M.D., B.S. (Melbourne),
Melbourne.

From the observation of a large number of infants who were in hospital mainly on account of dietetic troubles, the impression has frequently been gained that their weight on discharge as healthy babies has been in excess of what is usually regarded as the standard weight for the age of the child.

This has become more apparent during the examination of a number of infants and their charts in connexion with several "baby competitions."

In order to determine whether these impressions could be confirmed, a more detailed examination was made of a series of children comprising:

(i.) Infants discharged from the Children's Hospital.

(ii.) Competitors in a "baby show" conducted at Sandringham (Victoria) in 1925.

(iii.) Competitors in the Empire Baby Competitions of 1924-1925.

These details have been collected for the purpose of comparing the average weights of the normal healthy Australian baby at various ages with the

[1] Read at a meeting of the Melbourne Pædiatric Society on July 14, 1926.

recognized normal standard in other parts of the world.

With regard to the accuracy of the weights, those included in Group (i.) were all weighed in hospital by skilled nurses and there can be no doubt as to the accuracy of these figures. The children in Group (ii.) were also weighed on the day of "the show" by nurses from baby health centres and these figures can be safely regarded as correct.

In the Group (iii.) the infants were all stripped and weighed either by a health centre nurse or the family medical attendant and the charts containing the details had to be certified as correct by the medical practitioner who examined the competitor so that these data should all be quite reliable for purposes of comparison.

The figures for the new-born infants were very kindly supplied by Dr. Saltau, Medical Superintendent of the Women's Hospital. These consist of the average weights of a number of full-time babies, excluding twins, born at the Women's Hospital, Melbourne. They are as follows:

(*a*) November, 1925 (170 infants), 8·1 pounds.

(*b*) June, 1926 (217 infants), 7·7 pounds.

By taking this series (consisting of two thousand children in all) an approximate average standard has been arrived at for these Australian infants who can be regarded as representative of the ordinary well developed local baby.

While it is granted that there can be no rigid normal weight curve, it is claimed that such a series will give a reliable scale for healthy local children which will be suitable for comparison with other standards published from time to time.

Since most of our textbooks on children's diseases are of British or American origin, it follows that these are the standards which we have generally been accustomed to use for reference.

The various authorities quoted and the figures used by them may be seen in the accompanying table.

Hill[1] states that the:

Plotting of the baby's weight against a theoretical curve is a pernicious practice as babies vary so much in their initial weights that often the mother is unnecessarily worried by the failure of the baby to follow the curve.

This is corroborated by Brailsford-Robertson[2] who points out that:

The birth weight is influenced by a number of factors, including the nutrition of the mother, the number of previous pregnancies (in general each successive pregnancy tends to an increase in the weight of the child at delivery), sex, race and environment.

He also draws attention to the fact that:

South Australian infants weigh considerably more at birth than those born in Great Britain, *e.g.*, the average birth weights were:

Edinburgh and London—	
Males	7¼ lb.
Females	7 lb.
South Australia—	
Males	8 lb.
Females	7½ lb.

This fact is all the more striking because 97% of the population had been born either in Australasia or the United Kingdom.

According to Knibbs,[3] the Commonwealth Statistician:

The evolution of the Australian people may be regarded as that of British people under changed climatic, social and economic conditions.

The average weight is usually greater in breast fed than in artificially fed children.

It is only reasonable to assume that those children who have a greater birth weight, that is who have a better start so to speak, should, other things being equal, follow a curve on a higher level than those not so fortunately situated at the beginning and this is borne out by a study of the weights of the children now under consideration. It will be seen that these children have commenced life with an advantage over children in other countries and this advantage has been even more than maintained throughout infancy and early childhood.

This is shown even more clearly when the weight curves are plotted graphically as shown in Figures I. and II.

Brailsford-Robertson[2] further demonstrated that there is a certain degree of variation with normal healthy children above and below the average standard of normality and that the curves of these limits run on a level respectively above and below

Table Showing Comparison of Weights in Pounds at Different Ages.

Number.	Author.	Birth.	Three Months.	Six Months.	Nine Months.	One Year.	Eighteen Months.	Two Years.	Thirty Months.	Three Years.
1	Australian infants (Southby)	(a) 8·1 (b) 7·7	16	20	24	26·5	29·5	33	36	39
2	Griffith[4]	7·5	12·25	16·25	18·75	21·5	25·25	28	30	33
3	Goodhart and Still[5]	7·5	12	16·25	20	22·5	—	28	—	32
4	Pritchard[6]	7·5	11·5	14·75	18	21·5	25	28	30	32
5	Thomson[31]	7	12	17·75	19·5	21	—	26·5	—	31
6	Hill and Gerstley[7]	7·5	13·25	18·5	22·5	26·5	—	—	—	—
7	Hill[1]	7·5	13·25	19	22	25	—	—	—	—
8	Brailsford-Robertson[2] ("Abt's Pediatrics")—									
	(a) Males	7·25	12·25	15·75	18	19	—	—	—	—
	(b) Females	7	11·5	14·5	16·75	18	—	—	—	—
9	Holt[8]	7·5	13	16·5	19	21	—	—	—	—
10	Porter and Carter[12]	7·25	12	15	18·75	22	—	—	—	—
11	Truby King[13]	7·5	12·25	16	18	21	—	—	—	—
12	Hutchison[9]	7	12	—	—	21	—	—	—	—
13	Still[10]	7	—	—	—	21	—	28	—	—
14	"Lactogen Book"	7	11	15·5	17·5	20	—	—	—	—
15	"Glaxo Book"	7·5	12	16	20	22·5	—	—	—	—

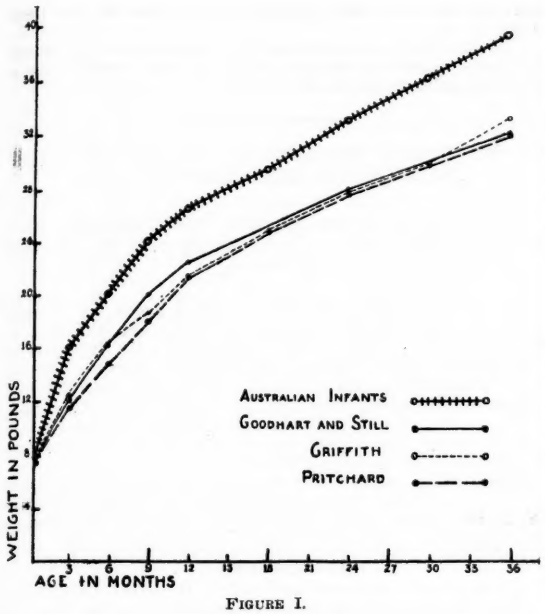

FIGURE I.

the normal, but parallel to it. He considers such charts of value in judging the rate of growth of an infant and points out that it is immaterial if the curve for any individual infant is above or below the mean curve provided that it remains parallel to and does not intersect the latter.

It is with the hope of arriving at a standard average curve for infants growing under local conditions that these notes are published and the author hopes that the figures obtained will serve as a useful guide in judging the rate of growth of infants in this part of the world.

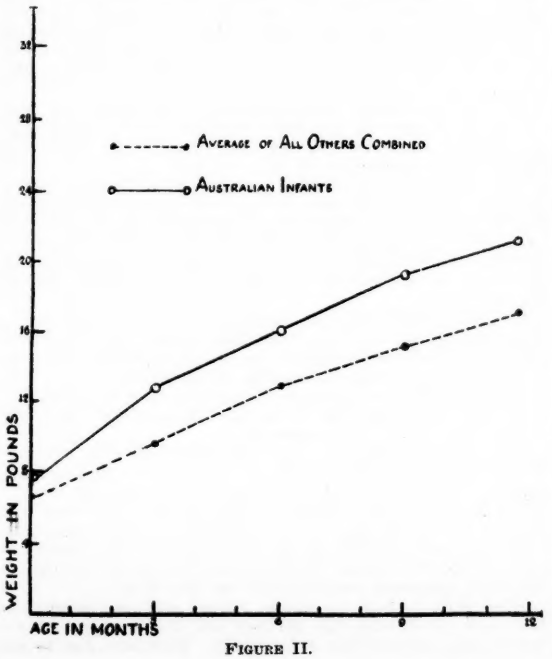

FIGURE II.

Acknowledgments.

I wish to express my thanks to Mrs. James Gatehouse for the records of the Sandringham babies; to the proprietors of *The Herald* and *Punch*, Melbourne; and especially Mr. Sanderson and Dr. F. Kingsley Norris for permission to use the charts of the Empire Baby Competition and also Dr. Saltau, of the Women's Hospital, for kindly supplying the figures for the birth weight of the new-born infants.

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Reports of Cases.

A SIMPLE METHOD OF TREATING FRACTURED CLAVICLE.

By J. Forbes Mackenzie, M.B., Ch.B.,
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This method for which I claim no originality, is, I think, of French origin, but I forget where I first came across it. The procedure is as follows:

The patient must be put to bed and after all most sufferers from this injury are quite entitled to a week or so in bed, especially as they are perfectly comfortable from the very beginning of treatment—a striking contrast to the feelings of the person who is trussed up in the conventional manner. No strapping and no appliances are required. Bring the side affected right to the edge of the bed and allow the arm of the injured side to hang straight down to the floor, as if endeavouring to pick something off the floor. This first hanging down position is maintained for four hours and my experience is that patients find no difficulty in doing this. After four hours, bring alongside the bed a chair with a pillow on it. The patient then for the remainder of the treatment rests his elbow on this pillow in an easy position, but still with some slight drag on the shoulder. Correction of deformity is certain and most accurate, no matter how bad and union appears to be extraordinarily rapid.

I have never had a failure, and I have used this method for years. The most striking feature of the treatment is the comfort allowed to the patient.

Two recent cases may be quoted.

Case I.—G.P., aged sixty-five years, as the result of a motor accident sustained a fracture of the right clavicle

of peculiar type. There was great displacement and the skin had been pinched by the fractured ends of bone, producing a funnel shaped depression. His shoulder was "put up" at a public hospital the day before I saw him and the house surgeon told me that he could not get it to maintain a corrected position and that at any rate he could not get the fragments to free the pinched skin.

On having his arm released from strapping and bandages and hanging it out of bed, the patient expressed himself as relieved at once and the fragments released the pinched skin. This patient suffers from chronic bronchitis and is not at all a strong man, but on the tenth day after the accident he shook hands with me and told me that he could do anything with the arm. He was able then to be up and for support hooked his thumb on one of his waistcoat buttons.

CASE II.—A young man who is one of our well known amateur riders and who gets plenty of falls, fractured his clavicle for the fourth time last Monday. His doctor asked me to see him with a view to wiring the bone, as the position was so bad and there seemed no prospect of getting anything like a decent result. The patient who is experienced, said that it was the worst he had had.

On hanging the arm he said that made it comfortable immediately. His doctor told me that next day position was perfect. Yesterday, that is less than six days since the accident, the position was excellent, in spite of the fact that the patient had been taking his arm into bed with him contrary to instructions. He expressed himself as not having had a scrap of pain all the time and he contrasts this with his sufferings with other collarbone fractures. We shall let him up on the eighth day with a long sling.

Objections may be raised to the necessity for bed, but I have always thought that a fractured clavicle is worthy of bed.

For emergency treatment I would suggest putting the arm of the injured side behind the patient and slinging it there. After all, the arm behind the back is a favourite position with deep thinkers and the sufferer from a fracture has usually something to think about.

GALL STONES IN A CHILD OF NINE YEARS.

By WOLFE S. BROWN, M.B., Ch.M. (Sydney),
Honorary Surgeon, Balmain and District Hospital.

M.A., FEMALE, aged nine years, was seized with sudden abdominal pain about 9 a.m. on May 2, 1926. This continued all day and vomiting accompanied it. The bowels had acted once after a dose of oil. I was called in at midnight. She was lying on her back with the right thigh and leg flexed, as is typical of acute abdominal trouble. The temperature was normal, the pulse rate 130 and the respiratory rate 30 in the minute. The abdomen was flat, was not moving much and, though tender all over, was more so on the right side which was rigid. The tenderness was certainly more pronounced below the right costal margin, though much complaint was also made of tenderness at McBurney's Point. The urine contained nothing abnormal and the bowels acted well with an enema. She was removed to Balmain Hospital for operation which was performed at 5.30 a.m. A diagnosis was made of acute cholecystitis, but since the appendix placed up towards the liver could not be excluded, I decided to make a small gridiron incision first. A congested appendix, obviously not the cause of trouble, was removed. The finger was easily passed up to palpate a tense enlarged gall bladder. A right rectus muscle splitting incision was now made. The gall bladder contained thick, white, putty-like, peculiar *débris* and two stones the size of peas. A third stone could be felt impacted low down in the cystic duct and could not be milked back into the gall bladder. An incision was therefore made into the duct and the stone removed in pieces with difficulty. It did not seem advisable to remove the gall bladder in one so young. Stenosis of the duct would certainly have resulted, however, and cholecystectomy was therefore performed. The child made an uninterrupted convalescence, leaving hospital at the end of the third week.

I would like to acknowledge the assistance of Dr. Bruce Williams, Resident Medical Officer of the hospital, for a carefully administered anæsthetic.

OTITIC VENOUS THROMBOSIS: A CASE OF DIRECT INFECTION OF THE JUGULAR BULB.

By G. A. D. MCARTHUR, M.D., B.S. (Melbourne),
Honorary Aural Surgeon, Victorian Eye and Ear Hospital, Melbourne.

As a complication of *otitis media*, acute or chronic, direct infection of the jugular bulb through the floor of the tympanic cavity is rare, compared with infection of the sigmoid sinus through the mastoid antrum. Fraser, analysing twenty-eight cases of otitic venous infection that occurred in sixteen years in Dr. Logan Turner's department at the Royal Infirmary, Edinburgh, found that in two of these direct infection of the bulb had occurred. Diagnosis is made more difficult.

When the sigmoid sinus, exposed at operation, is found to be healthy, then delay in attacking the internal jugular vein may occur, thus jeopardizing the patient's chances of recovery.

Clinical History.

A record of the folowing case is therefore of interest. R.E., male, aged thirty-six years, attended the Eye and Ear Hospital on September 2, 1925. He stated that his left ear had been discharging on and off since he was eleven years old. It had never given him any trouble till ten days previously, when pain commenced deep in the ear and had continued till the present time. Examination of the left ear revealed a slight amount of foul pus and some granulations on the inner wall of the tympanic cavity. There was no sign of any remains of the drumhead. While being examined the patient had a rigor and vomited. The temperature was found to be normal, but two hours later it was 40° C. (104° F.). No previous rigors had occurred.

A radical mastoid operation was performed the same day. The mastoid process was densely sclerotic. Pus under pressure was found in a small antrum. Cholesteatoma filled the aditus and attic. The sigmoid sinus was then exposed in the region of the upper genu. To reach it twelve to eighteen millimetres of ivory-like bone had to be chiselled away.

No pus was found in contact with the sinus, the wall of which appeared perfectly healthy. The sinus was not opened and the patient was returned to the ward for further observation.

The patient did not have another rigor for five days. He said that he felt well, though the temperature varied between 37·8° C. (100° F.) in the morning to 39·4° C. (103° F.) in the evening. On the third day, when the mastoid was dressed, it was noticed that his neck was stiff and that he supported his head with his hands on all movements.

On the fourth day the stiffness had increased rather than diminished and was more exaggerated than the usual slight postoperative stiffness due to interference with the attachment of the sterno-mastoid at operation.

On the fifth day a second rigor occurred and the stiff neck was accounted for by a painful swelling under the upper end of the sterno-mastoid.

The internal jugular vein was then exposed. It was found thrombosed throughout its whole length and as much as possible was resected. The upper end contained broken-down purulent clot having a fæcal odour. The wall was greatly thickened and the surrounding tissues œdematous.

It was not possible at the lower end to get below the thrombosis, but where the vein was ligated at the clavicle the wall appeared healthy and the clot firm.

The patient had no more rigors and no metastases occurred. Recovery was delayed and the temperature did not become normal for a fortnight. This was due to pus

from the region of the bulb tracking into the fascial planes of the posterior triangle. This necessitated incision and also opening of the sigmoid sinus as far forward as possible in the region of the jugular bulb. Pus also formed to a lesser extent over the lower end of the vein.

During convalescence a sequestrum separated from the floor of the tympanic cavity, evidently marking the site of infection of the jugular bulb.

Comment.

If in a patient presenting symptoms of otitic venous thrombosis the sigmoid sinus is found healthy, then the thrombosis is most likely to be in the jugular bulb.

The surgeon then has two courses open to him.

If the symptoms are pronounced and several rigors have occurred, then he should at once proceed to ligate the internal jugular vein.

On the other hand, if only one rigor has occurred before operation, it may perhaps be permissible to wait until another rigor makes the diagnosis more certain.

A rigor may be present in the initial stage of a brain abscess or at the onset of meningitis, but recurring rigors are found only in cases of septic thrombosis.

An outlook should also be kept for torticollis.

Tenderness on pressure or swelling should be sought for along the anterior border of the sterno-mastoid near its insertion. When direct thrombosis of the bulb occurs, signs appear in the neck earlier in the course of the disease than when the sigmoid portion of the sinus is affected.

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Reviews.

ADVANCED BIOCHEMISTRY.

The popularity of "Practical Physiological Chemistry," by S. W. Cole, is shown by the fact that it was first written in 1904 and has now reached the seven edition.[1]

This book has always been distinguished by the care with which every experiment described has been thoroughly tested in the author's laboratory, whilst the descriptions are given with such minuteness of detail, that no ordinary student should experience any difficulty in successfully repeating them. Many of the methods are the author's own work and have involved considerable research work in their elaboration.

Most of the current methods for the examination of biological materials are described and the author does not hesitate to say when such methods have not proved satisfactory in his hands. This is a useful feature of the book and might well be copied in the many books on biochemical methods which have appeared in recent years; most of these are merely an uncritical reduplication of the already voluminous literature on the subject.

The book contains several additions and alterations from the last edition which have been rendered necessary by recent advances in the science.

A chapter has been added containing a detailed account, both theoretical and practical, of the electrometric determination of hydrogen ions in solution and many hints are given of the errors and difficulties which the beginner may encounter. In this section a new double hydrogen electrode is described which does away with the calomel electrode.

One of the great advances in biochemistry is to be found in the microanalysis of blood and a section is devoted to this subject. In this are described most of the modern methods which have stood the test of time.

Another valuable addition is a chapter on oxidations and reductions in the living organism with a discussion of the current theories on the subject.

The author uses certain expressions which jar and which are more suitable to the cookery book than the laboratory manual, such as: "a speck or two of resorcin," "a large knife point of benzidene," "three-quarters of a large blade well piled up once" *et cetera*.

The book can be thoroughly recommended as one of the best books on advanced biochemistry.

[1] "Practical Physiological Chemistry," by Sydney W. Cole, M.A.; Seventh Edition; 1926. Cambridge: W. Heffer and Sons, Limited. Demy 8vo., pp. 479. Price: 16s. net.

MEDICAL JOURNALESE.

Dr. George H. Simmons, until recently the editor of *The Journal of the American Medical Association*, and Dr. Morris Fishbein, the present editor, have published a highly interesting little book entitled "The Art and Practice of Medical Writing."[1] It is presumably addressed to contributors and would-be contributors to medical periodicals, particularly in the United States of America. There is ample evidence throughout the little work of the care expended by the two learned authors in its preparation and of their experience. The greater part of its contents is worthy of study by all English speaking medical practitioners; a small part appears to us to be useless to contributors, although it comprises matter that is or should be familiar to editors of medical periodicals; some of it is unacceptable to English authors.

The arrangement of the chapters is somewhat haphazard. But as the size of the book is small, it is easy to gather the lessons contained at a single sitting. The main contents treat of the way in which a good article should be written and prepared for submission to a medical journal. The authors rightly give the first place to a discussion of the real objective of an acceptable article. The standard recognized for the acceptance of papers offered for reading before the Scientific Assembly of the American Medical Association is admirable. The papers must contain and establish new facts, modes of practice or principles of value or they must embody the results of original research or they must comprise a review of the facts concerning a chosen subject which will enable the reader to deduce therefrom important conclusions. How few articles published in British or American medical journals satisfy these conditions.

The authors are emphatic in their statement that the readers of a medical journal have their rights. No article should be accepted for publication if the claims of the writer are without scientific proof. Facts are needed, not fancies. Some admirable advice is given concerning the best methods of presenting facts. The authors express the opinion that length in itself is not a fault. If the message to be delivered cannot reasonably be compressed within a small compass, provided that space is not wasted by the inclusion of unnecessary words and sentences, the article will prove to be acceptable.

A salutary lesson is delivered on style in writing. Bad grammar, verbosity, the use of medical slang and the habit of writing florid sentences without meaning are singled out for special treatment. It is admitted that the art of good writing cannot be taught. But acceptable medical journalese can be produced by any educated medical practitioner who will take trouble and who is careful to present his matter in short, simple sentences. The authors object to the employment of unusual words. Surely if a particular word conveys the desired meaning better than any other, it should be used. Redundant words must be eliminated. The authors devote not a little space to this aspect of good writing, yet they are responsible for several breaches of the rule. The following is quoted in support of this: "This standard provides that papers must either (1) contain and establish positively new facts, modes of practice or principles of real value; (2) embody the result of well advised, original researches, or (3) present so complete a review of the

[1] "The Art and Practice of Medical Writing," by George H. Simmons, M.D., and Morris Fishbein, M.D.; 1925. Chicago: Press of American Medical Association. Sydney: Angus and Robertson, Limited. Post 8vo., pp. 163. Price: 7s. 6d.

facts concerning any particular subject as to enable the reader to deduce therefrom legitimate, important conclusions." They proscribe slang in writing and yet they write: "Conclusions are 'fat' for abstracters and for editors who are looking for 'fillers'."

The section on revision should be read with care. No one can write a readable article without reconsidering each sentence and each word several times. The revision is needed to eliminate unnecessary and irrelevant matter, to insure the best sequence of ideas, to exclude useless adverbs and adjectives and to impart to the whole a rhythm so that the reading may be pleasant. A man who submits an unrevised, untidy manuscript for publication in a medical journal, has obviously no pride nor any consideration for the maintenance of a high standard of technical literature. Single-spaced carbon copies submitted to *The Journal of the American Medical Association* are rejected. The authors do not entertain the possibility of an article being submitted in manuscript.

Some valuable advice is given in regard to the preparation of photographs and drawings for reproduction. The authors instruct writers how to prepare graphs and charts, so that they may be suitable for the making of line blocks. They also deal with the question of references and bibliographies.

A few pages are devoted to the various type faces used in American medical journals. It is not clear why this matter is introduced, since it is of no concern to the authors of articles, but is a matter for the editor and printer. Some of the remarks on spelling are horrible to our conception of the English language. We abhor abbreviations, particularly the medical variety. In regard to punctuation we claim that authors submitting articles for publication in a periodical should be prepared to accept the method adopted by the editors of that periodical, so that consistency may be maintained.

The authors of this book are the recognized authorities in medical journalism in America. Their opinions are for the greater part acceptable and in consequence this book must prove a valuable guide to American authors. If it is used by citizens of the British Empire, there must be some circumspection, for our rules differ to some extent from the American. If space permitted, it would be worth while to reproduce a great deal from the book for the benefit of Australian medical practitioners.

PSYCHIATRY.

"MENTAL Invalids" comprises the subject matter of three lectures delivered by C. E. Easterbrook before the College of Physicians, Edinburgh.[1] The book is well printed, small and compact; but is withal a veritable *résumé* of the whole range of psychiatry. At a time when the output of psychiatric literature is enormous, when the reader is confused by a multitude of conflicting and at times fantastic schools of thought, it is indeed refreshing to meet with a book in which only accepted facts in mental diseases are presented.

The books consist of but five chapters. The author shows that the sovereignty of man is due to the preeminence of his nervous system. He accepts with reservations Freud's teachings. He goes on to define a mental invalid "as one the subject of mental disease either congenital or acquired." An elaborate scheme is then given for the examination of a mental patient. The examination must be a full one—the bodily functions as well as the mental processes of the patient must be examined in detail. The author dwells at some length on the causation of mental diseases. He summarizes the cause thus: "A nervous constitution, inherited or acquired (predisposing factor) *plus* stress (exciting factor)." He makes the remarkable statement: "No one becomes insane without previously being or becoming nervous." Whilst most will admit this as true in many cases, few will accept it in its entirety. His remarks on the results of the stress and strain of modern life are illuminating and perhaps alarming: "One is forced to the conclusion that the Nordic, and in particular the Anglo-Saxon, is living beyond the capacity of his nervous system and one fears to contemplate his fate at the same or at an increasing pace of existence during the ensuing generation or two."

Above all is the author refreshing in his chapter on the classification of mental diseases. He contends: "We should concentrate on the bold outlines and main essentials of a mental invalid and not dissect him *ad nauseam*." As he points out the psychoses of mental invalids are never alike and different men see the psychoses differently. Hence has arisen the manifold classifications of mental diseases. Every author has his own classification—*Quot homines, tot sententiæ*. In spite of these facts the author himself attempts a fresh classification. Now all authors agree that the classification of mental disease is hopelessly inadequate and misleading. Whilst it is admitted that a uniform scheme of classification is necessary for statistics and description, the author leans, but not consistently so, to the ultramodern school which insists that we should try and understand the mental condition of the patient and not be content to label his psychosis with a classical diagnosis as manic-depressive psychosis or *dementia præcox*.

In the final chapter the author deals with "some aspects and methods of cure." His methods of treatment follow the usual lines as laid down by all authorities. He advocates the early treatment of mental disease. With this end in view he urges the establishment of psychiatric clinics in every general hospital and medical school. The scheme of the voluntary admission of patients to mental hospitals is urged as worthy of universal adoption.

The book is most readable. It can be confidently recommended to the psychiatrist who will find in it many valuable hints and much food for thought. With equal confidence it can be recommended to the general practitioner for its clear exposition of the modern view of mental diseases.

[1] "Mental Invalids," by C. C. Easterbrook, M.A., M.D., F.R.C.P.E.; 1926. Edinburgh: Oliver and Boyd. Royal 8vo., pp. 86. Price: 5s. net.

THE CRIPPLES' JOURNAL.

WE have received a copy of *The Cripples' Journal* and a request to publish a notice in our columns. The editor must have realized that he was running no risks, for his excellent magazine cannot fail to command the approval and admiration of all interested in children and especially in children handicapped by physical deformity. *The Cripples' Journal* was founded by Miss Agnes Hunt at the Shropshire Orthopædic Hospital. Sir Robert Jones refers to its establishment as a hazardous enterprise and he wittily says of Miss Hunt that her mind travels so fast that it is apt to leave the rest acquiescent but breathless. It is a quarterly book of royal octavo size comprising approximately eighty-eight pages. The editorial staff is voluntary and the contributors are unpaid. It is addressed to a large extent to the public, for the aim which Miss Hunt had in view was to propagate knowledge concerning the causes of deformity and their nature. The articles are well written, short and interesting. The names of Edward Mellanby, Dingwall Fordyce, Alwyn Smith, Putti, Hans Spitzy and Murk Jansen appear in the lists of authors of recent issues. Many others are not medical, but each has a message to deliver and it is worth while reading what they have to say.

The Cripples' Journal has emerged from its insecure beginning triumphant over all the difficulties that surround so audacious an undertaking. The second stage has begun. It has been adopted as the official organ of the Central Committee for the Care of Crippled Children. We are convinced that those who have been responsible for its appearance hitherto, can brush aside any anxiety they may have experienced in the past. It is now recognized in all parts of the world as an established journal with a purpose and it is fulfilling its purpose. We commend it to those who are interested in the prevention of deformity in children. The profits are devoted to the cause of crippled children.

The Medical Journal of Australia

SATURDAY, OCTOBER 9, 1926.

Prenatal Supervision.

No one will challenge the correctness of the assumption that the existing excessive mortality and morbidity of women after childbirth and the high death rate of new-born infants can be reduced by skilled supervision of the woman throughout her pregnancy. Unfortunately the assumption is only a theoretical one. Its truth is not obvious when it is translated into practice. The supervision is of value if it is the means of the discovery of abnormalities and if measures can be adopted to prevent the discovered abnormalities from endangering the safety of either or both the mother and her infant. Who is competent to carry out this supervision? The detection of physical defects, of pathological processes and of anatomical peculiarities demands ingenuity, knowledge and powers of observation. The supervision is useless if it involves merely a few minutes' chat, a cursory inspection and palpation of the abdomen and a manual examination of the pelvis through the vagina. The urine must be examined, but this means more than a rough, qualitative test for albumin. It may be necessary to determine the functional efficiency of the kidneys. Syphilis and gonorrhœa must be borne in mind and if an infection be present, the fact must be elicited. The examination should embrace a search for the slightest signs of any of the commoner complications of pregnancy, parturition and lactation. An endeavour should also be made to ascertain whether or not the fœtus is normal. It therefore follows that by skilled supervision is meant a control that demands care, an extensive knowledge of obstetrics and medicine and the expenditure of a considerable amount of time. Obviously no one other than a medical practitioner can be trusted to conduct these examinations. No nurse can have sufficient knowledge. It may be questioned whether every general practitioner can or will devote sufficient time to the supervision. The application of Wassermann tests, of complement deviation tests for gonococcal infections, of bacteriological examinations and of other biochemical tests may render it almost essential to place the patient in an institution equipped for this purpose and having the service of trained biochemists. It must be remembered that at present there is no evidence to indicate the true value of these various investigations in practice. It is known that the maternal mortality from all puerperal causes has varied around 5% during recent years in the Commonwealth; that the rate has increased rather than diminished; that the number of deaths of women at and after childbirth is greater than the number of deaths of persons from cancer or even from cardio-vascular disease; that the death rate of infants under one year of age in Australia is still over sixty per thousand births; that the amount of morbidity of mothers and infants is appallingly large. Facts and figures have been published to show that under the most favourable circumstances deaths from conditions like eclampsia can be prevented or reduced to very small numbers. Scraps of information are available concerning the value of prophylactic efforts directed toward individual diseases or complications. But there are as yet no data that can serve as a basis for the estimation of the effect of well applied prenatal supervision on maternal mortality and morbidity and infantile mortality generally embracing a large Australian community. We have clamoured over and over again for the application on a large scale of the work carried out by Dr. R. Fowler and Dr. Hamilton Fairley on syphilitic infections in mothers and their infants.

The Federal Committee recently considered the recommendation of the Royal Commission of Health that the maternity allowance should not be paid unless a medical certificate were forthcoming to the effect that the mother had had prenatal supervision. The Western Australian Branch held that in certain parts of Australia it would be impossible to provide prenatal supervision. We venture to express the opinion that adequate supervision may prove un-

attainable save in the cities and larger towns and that the medical profession must alter its attitude toward preventive medicine before a satisfactory advance can be registered. The Melbourne Permanent Committee for Post-Graduate Work has done pioneer service in educating the general practitioner in this particular branch of work. The effort must be sustained and must be followed by investigations into the results of the application of modern methods of supervision. A highly interesting report has recently been issued by Dr. H. Main and Dr. Vera Scantlebury on the welfare of women and children in Victoria and in New Zealand in which some suggestive information is given. A critical summary of this report will be published in a future issue. The authors, however, have not succeeded in collecting data to reveal what the practising portion of the profession can do to lessen the loss of life and of health of mothers and their babies. No doubt the Director of Obstetrical Research will seek and present as much of this information as can be gathered under the present conditions. The plan for the immediate future must embrace the application of prenatal supervision by medical practitioners in all parts of the Commonwealth to reach as many expectant mothers as possible and an analysis conducted by the most competent obstetricians available of the results that are achieved under the varying economic circumstances. The need for the output of great energy to reduce the number of deaths and the amount of illness occasioned by childbirth has been brought prominently before the medical profession. It now rests with the profession as a whole to manifest determination to expend that energy.

Current Comment.

PERNICIOUS ANÆMIA.

In 1890 William Hunter put forward his view that pernicious anæmia is the result of bacterial infection of the gastro-intestinal tract. It had previously been shown by Cahn and von Mering in 1886 that patients with pernicious anæmia also suffer from an absence of hydrochloric acid in the gastric juice. It was held that the achlorhydria was a result of the pernicious anæmia and it remained for Faber in 1913 to advance the view that the absence of hydrochloric acid stands in causal relationship to the anæmia. The credit must be given to Hurst, however, for having propounded what has been described as the most satisfactory working hypothesis so far elaborated. The work of Hurst has been the subject of repeated reference in this journal. He regards the absence of hydrochloric acid in the stomach as the primary factor. This means that the bactericidal barrier in the stomach is removed, microorganisms are enabled to pass through the stomach and reach the upper part of the small intestine. Here they may produce either a hæmolysin or a neurotoxin or both. In the latter case the predominance of a hæmolysin will result in pernicious anæmia with spinal cord changes and an excess of a neurotoxin will bring about subacute combined degeneration of the cord with an accompanying anæmia. It is interesting in passing to remember that but a few weeks ago we drew attention to some recent work by Faber on *achylia gastrica*. It is his contention that apart from achylia of nervous origin this condition is due to the same causes which produce diseases in other organs, namely direct irritation or hæmatogenous intoxication by bacterial toxins or autotoxins.

A familial incidence has been noticed repeatedly in pernicious anæmia and it is a matter of common experience that *achylia gastrica* may occur in more than one member of a family. Dr. S. E. Dorst in a recent discussion on familial pernicious anæmia expresses the conviction that gastric analysis of the members of the immediate family of any patient suffering from pernicious anæmia would reveal the presence of constitutional achlorhydria.[1] He gives details of a remarkable group of cases of pernicious anæmia occurring in one family. A woman, aged forty-four years, came for examination and was found to be suffering from pernicious anæmia. On investigation of her family history it was found that her mother had died of the same disease as had also a sister and brother. Another brother was found to be suffering from pernicious anæmia. No definite history could be obtained in regard to the father, but it was determined that he did not die of anæmia. Six other members of the family were examined. Two were normal and four were found to be suffering from achylia. Of the latter two were brother and sister of the original patient, one was her nephew and the other was her daughter. Dr. Dorst refers to the observations of many other workers in regard to the familial incidence of pernicious anæmia and expresses the opinion that the history quoted by him is the most unusual family history on record. He points out that in the last eleven carefully investigated cases at the Cleveland Clinic within the last six months a family history of the multiple occurrence of the disease was found in four. Dr. Dorst concludes that the achlorhydria of pernicious anæmia is the factor essential for the development of the disease and that it is often congenital. He answers the possible objection that about 3·5% of the population suffer from achlorhydria and that this figure is far above the incidence of primary anæmia. In the first place he

[1] *The American Journal of the Medical Sciences*, August, 1926.

holds that pernicious anæmia occurs with far greater frequency than would be supposed from the general medical opinion or from the vital statistics. In the second place he points out that any argument as to the percentage of the population suffering from achlorhydria in no way weakens the contention that achlorhydria is the primary predisposing factor in pernicious anæmia. "It would be just as logical to exclude diseased tonsils as a cause of nephritis simply because thousands of people with diseased tonsils fail to show evidence of kidney disease."

In considering the question of pernicious anæmia an endeavour must be made to separate the hypothetical from the proven. If it can be determined that achlorhydria is the primary factor in the causation of pernicious anæmia, it may become possible to prevent the destruction of red blood corpuscles in many instances. It has been shown that the continuous administration of dilute hydrochloric acid produces an improvement in the blood picture in pernicious anæmia. Is this always so? Can the acid be used with effect as a preventive measure? Granted that it is effective in both these ways, can its effect be maintained over a large number of years? In other words does an acid introduced into the stomach have the same effect and the same effect only as acid that is secreted as a result of hormonic influence by the cells of the gastric mucosa? Dr. Dorst proposes to pursue his studies by investigating the intestinal flora in relation to bacterial foci in the mouth and throat. He also proposes to attempt to produce the disease experimentally in animals in which controls can be varied. In any case every medical practitioner can help by investigating the gastric secretion of all the members of the family of a person affected by pernicious anæmia.

MALIGNANT DISEASE OF THE RECTUM.

The peculiar anatomical relations of the rectum and the fact that incision of its wall is liable to be followed by sepsis have always combined to make the removal of a malignant growth of that organ a matter of some difficulty. The earliest form of removal from the perineum rarely produced results which were entirely satisfactory. The convalescence was long and recurrences often occurred soon afterwards. At the same time the lives of many patients were prolonged for it has been found that even the performance of a colostomy has resulted in the retardation of rate of growth of a carcinoma in the rectum. The names of Allingham and Harrison Cripps must be remembered as those of two who did sound work in the early days of surgery of the rectum. The introduction of the Kraske operation was a forward step, but the greatest advance has been made by Miles in devising his abdomino-perineal operation. At the present time there are three operations for malignant disease of the rectum which must be considered, those of Miles and J. P. Lockhart-Mummery, both of Great Britain and that of Coffey, of America. The points in favour of these operations were discussed fully by E. T. Thring in this journal in the issue of February 28, 1925. This critical summary and the discussion which followed it, will well repay perusal. No unbiassed person can fail to agree with Thring's contention that Miles's operation is the best planned and most radical and that generally it is the most satisfactory and suitable operation. Apart from its technical advantages the fact that by its means more complete removal can be effected should lead to the more general recognition of its superiority.

Lockhart-Mummery does not claim that his operation is suitable for all cases of malignant disease of the rectum. He does not use it when the growth is at or above the recto-sigmoidal juncture. His operation may be described in a few words as consisting of two stages. The first stage consists of a colostomy performed either a week before the second stage or at the time of resection. The second stage consists in the removal of the tumour with the lower part of the rectum and anus from the perineal aspect. Lockhart-Mummery has recently reported the result of two hundred operations carried out by his method.[1] One hundred of his operations were performed on private patients and one hundred on hospital patients. The mortality in the first group was three and in the second group fourteen. He claims that his patients were not selected. Of the two hundred patients ninety-five have been operated on for more than five years. On this five year basis forty-five are free from obvious recurrence, thirty-seven have suffered from recurrence, six have died from other causes and seven have not been traced. The reasons given for the higher mortality in hospital patients include the fact that they seek treatment at a later stage. This is, of course, one argument for the necessity of giving instruction to the public on the early signs of malignant disease. It is not intended to decry the excellence of these results nor will any attempt be made to analyse them. Probably no one will deny that Lockhart-Mummery's operation is suitable for certain forms of malignant disease of the rectum. It is quite another matter to determine whether Miles's operation shall be abandoned in favour of Lockhart-Mummery's. It may be noted that in Lockhart-Mummery's discussion of the subject the name of Miles does not appear, the abdomino-perineal operation is mentioned, but the name of its originator is omitted. A more important omission is all reference to deep radiation by X rays. Apparently this method of treatment has not been used by Lockhart-Mummery. In another communication he has stated that he disapproves of the use of X rays before operation on account of the vascularity produced. This has not been the experience of all surgeons. Even if X rays are not used before operation, there is no reason why they should not be used afterwards. The consensus of opinion is in favour of this course. "Team work" and "cooperation" are words used glibly every day. Surgeons especially would do well to remember the old proverb that "Actions speak louder than words."

[1] *The British Journal of Surgery*, July 1926.

Abstracts from Current Medical Literature.

GYNÆCOLOGY AND OBSTETRICS.

Paraplegia Following Breech Delivery.

G. Engelmann (*Wiener Medizinische Wochenschrift*, May 15, 1926) describes two cases of paraplegia in infants following difficult breech deliveries. The infants were ten months old when first seen and the lesion consisted of a fracture dislocation with destruction of the cord in the upper dorsal vertebræ. He emphasizes the rarity of the condition as most infants so affected do not survive birth. They were probably the youngest patients on whom diagnosis was confirmed by the use of "Lipiodol" injections. Under light ether anæsthesia one cubic centimetre of "Lipiodol" was slowly injected into the suboccipital region. The children collapsed at first, but soon recovered. Laminectomy was not performed owing to the advice of neurologists that such severe damage to the spinal cord was irreparable.

Rupture of the Uterus During Pregnancy.

James Riddell (*Journal of Obstetrics and Gynæcology of the British Empire*, Spring Number, 1926) in reporting a case of rupture of the uterus before the onset of labour, reviews the literature of those cases of rupture in which there is no gross anatomical defect and in which a predisposing cause is a diseased, degenerated or previously injured uterus. After analysing twenty cases he concludes that rupture of the uterus before the onset of labour is more common in *multiparæ* than in *primigravidæ*. Previous injury and infection of the uterus are the chief predisposing causes. The uterus not infrequently has thin walls and shows signs of chronic metritis. Slight forms of indirect violence often act as the exciting cause of rupture. Rupture is confined to the upper part of the uterus. Diagnosis depends on recognizing the acute abdominal condition, associated with signs of internal hæmorrhage, the whole condition being graver than that of a ruptured extrauterine pregnancy. Prognosis as regards the mother is good, provided she is submitted to operation. In twenty years the operative mortality has been reduced from 40% to 16% in the performance of laparotomy. Treatment consists in laparotomy, usually with hysterectomy. Occasionally it may be justifiable to suture the rent in the uterine wall. Injury of the uterine wall, associated with sepsis and followed by chronic metritis, may be the cause of rupture of the uterus at a subsequent pregnancy. Perforation of the wall by a curette, even though the wound heals without untoward signs, is not so harmless an accident as it may appear. Manual removal of the placenta with damage of the wall stands in the same relation. Any scar in the uterine wall is a potential danger, particularly when weakened even by mild sepsis. Prophylaxis is obvious. Intrauterine manipulations, whether instrumental or manual, call for the exercise of the greatest skill and care, particularly in the case of the puerperal uterus.

Hæmorrhage at Puberty.

Samuel A. Wolfe has reviewed twenty-six cases of severe menstrual bleeding occurring at puberty in patients at the General Memorial and Long Island College Hospitals (*American Journal of Obstetrics and Gynecology*, July, 1926). He finds that hæmorrhage at puberty is a definite clinical entity, presenting as menorrhagia or metrorrhagia in the absence of inflammation, neoplasia or the pregnant state. The soft patulous cervix is pathognomonic; the body may or may not be enlarged. Symptoms recur after curettage, but are always controlled by radium. Tissue removed at curettage is abundant, thickened and frequently polypoid. This is the result of a diffuse glandular, stromal and vascular hyperplasia. Persistence of solitary ripening follicles or simultaneous maturation of multiple follicles converts a physiological endometrial hyperplasia into a pathological type. These changes have been experimentally reproduced by Frank and others in laboratory animals. *Corpus luteum* formation is absent. The uterus is the direct seat of bleeding. Bleeding results from thrombosis of the endometrial vessels and ensuing necrobiosis and from actual mechanical rupture of engorged capillaries. The factors which occasion persisting follicular cysts in the ovary with its concomitant endometrial hyperplasia, remain a subject for future study.

Combined Intrauterine and Extrauterine Pregnancy.

Emil Novak (*Surgery, Gynecology and Obstetrics*, July, 1926) in reporting two cases of combined intrauterine and extrauterine pregnancy which were observed by him, analyses similarly two hundred and seventy-eight cases reported in the literature and gives details of thirty-three cases reported between 1913 and 1925. Clinically, two chief groups are encountered. In the early cases, representing the great majority, the picture is commonly that of a ruptured tubal pregnancy, while the uterine gestation is not recognized until operation or at a later stage. Occasionally, however, it is the uterine gestation which is recognized in the early months, the extrauterine not precipitating severe symptoms till later. Patients who are first seen in a later stage of pregnancy, have commonly been looked upon as normally pregnant until the occurrence of the extrauterine symptoms. Finally, in some instances both pregnancies have advanced to term and in nine of those collected by the author both children have been born alive. The treatment is dependent on the indications in each instance. In early cases, usually those characterized by extrauterine symptoms, the treatment is laparotomy. In the later cases the same plan may be advisable, although at times toward the end of pregnancy expectant treatment is justified until the onset of labour, when operative removal of both fœtuses is indicated.

Physiology of Pregnancy.

Hugo Ehrenfest, addressing the New York Obstetrical Society (*American Journal of Obstetrics and Gynecology*, July, 1926) advanced the following views. During the week preceding the menstrual flow ovarian hormones initiate profound biological changes not only in the genitalia but throughout the organism. These definitely manifest the consistent and propitious preparation of woman for impregnation. They necessarily are in evidence at the moment of the implantation of a fertilized ovum. It, therefore, is unjustifiable to explain any of these biological changes as due to some foreign protein, cytolysin or any other factor dependent upon the implantation process. They are due alone to ovarian hormones. Changes, primarily the result of cyclic ovarian function, are modified during pregnancy and others are added as gestation progresses. There is gradual adaptation to the quantitative and qualitative needs of the fœtus and for disposal of the end products of fœtal metabolism. Later, there is adjustment to accommodate the enlarging uterus. In the normal, healthy woman this adaptation is achieved and she remains in a state of health. In the woman who is constitutionally deficient or in whom certain organs or systems are unable to respond with increase of function to an increase of demand, adjustment is slow or imperfect. The result appears in the clinical pictures, described as the toxæmias of pregnancy. The assumption appears justified that with further addition to knowledge of the general biological effect of cyclic ovarian activity, a careful analysis of the premenstrual reaction of the individual may make possible a prediction as to how she is likely to adjust herself to the demands made by pregnancy.

Intracranial Birth Injuries.

Alfreda H. Baker who has been carrying out research work on the subject of the causation of fœtal death in the Obstetrical and Gynæcological Unit of the Royal Free Hospital, has published a preliminary communication on the factors involved in the production of intracranial birth injuries (*Journal of Obsterics and Gynæcology of the British Empire*, Summer Number, 1926). The conclusions are based partly on a survey of the important published papers on the subject and partly on the series of one hundred

autopsies on dead-born and still-born fœtuses of viable age and on infants dying in the neonatal period. The author concludes that cranial stress depends on two main factors, the outside pressure to which the intracranial contents are subjected and the degree of congestion of the cerebral veins and dural sinuses. The *post mortem* evidences of cranial stress are tears of the *tentorium*, engorgement of the vessels of the *pia mater*, of the choroid plexus and of the intracranial sinuses and intracranial hæmorrhages. It is suggested that tears of the *tentorium* are a sign, not so much that undue force has been exerted on the head, as that it has been exerted in the wrong diameter, namely the occipito-frontal. That this type of force is injurious to the contents of the skull is shown by the fact that in the majority of cases of fatal intracranial stress lesions of the *tentorium* are manifest. Intracranial hæmorrhage has two main causes, intense venous congestion caused by acute anaerosis and stress of delivery. Subtentorial hæmorrhage is probably almost always due to cranial stress and is fatal. It is often accompanied by tentorial tears, but may occur without them; its cause is rupture of the vein of Galen or of its tributaries. Hæmorrhage due to asphyxia alone is in the form of a general oozing over the surface of the hemisphere—subpial or subdural. The hæmorrhages in the author's series occurred more frequently in full term or postmature than in premature fœtuses. It is suggested that full flexion of the head in the application of forceps and in breech deliveries, apart from involving a smaller diameter of the head and thus aiding delivery, would prevent many tentorial tears.

NEUROLOGY.

Misleading Symptoms in Tabes Dorsalis.

Michael Lapinsky (*Psychiatrisch-Neurologische Wochenschrift*, February, 1926) refers to cases of definite *tabes dorsalis* in which various non-tabetic irritative disturbances of visceral organs complicate the picture and are mistakenly diagnosed and treated. For example in one case periodical vomiting accompanied by girdle pain in the fifth to the eighth intercostal spaces was naturally referred to gastric crises. Further examination, however, disclosed a pyloric ulcer and gastric dilatation. Gastro-enterostomy was performed with happy result. Similarly, patients whose *tabes dorsalis* was complicated by prostatic trouble, obstinate constipation and hepatic congestion, were relieved by simple treatment and hundreds of other examples could be given. It is obvious, therefore, that organic disease of the nervous system may be accompanied by confusing symptoms of visceral disease. Successful treatment accordingly demands watchful general diagnosis. Improvement in a case of *tabes dorsalis* may be falsely ascribed to the effect of some medicament upon the nervous system, whereas, in fact, the effect has been upon some internal organ.

Chromoneuroscopy.

Edward Flatau (*Revue Neurologique*, January, 1926) gives the name chromoneuroscopy to those methods in which a colouring reagent is introduced to the cerebro-spinal fluid. It has for its aim the determination of certain pathological conditions of the central nervous system. There are but two methods, both elaborated by experiment on animals. The first consists in the intravenous injection of sulphocyanide of ammonium and the subsequent withdrawal of cerebro-spinal fluid and observation of its reaction to ferric chloride; reaction may occur ten minutes after the injection. The second consists in the intravenous injection of acid fuchsin and the subsequent determination of the presence of this stain in the cerebro-spinal fluid. Clinically up to the present the tests have been applied in thirty cases of various diseases of the nervous system and only in cerebro-spinal and tuberculous meningitis has the reaction failed to occur.

The Problems Presented by General Paresis.

E. Kraepelin (*Journal of Nervous and Mental Diseases*, March, 1926) writes that the problems involved by a present day study of the conditions under which general paresis developes are manifold. A more detailed study should be undertaken of the biology of the spirochætes, the manner in which they invade the body, above all the brain and the defensive measures called into action. A second field for research lies in the systemic changes wrought by general paresis. It is of the utmost importance that the metabolism of general paretics be investigated for information as to the nature and seat of the pathological disorder which causes paretic decay. It is also essential that current comparative statistics be prepared concerning the incidence of general paresis in different countries and among the different nations. Such figures are of value only when the incidence of syphilis itself is known, a deficiency which devaluates all figures published in the past. Alcoholism and the incidence of infectious diseases ought also to be the starting points for further research. A last question is whether the incidence of general paresis is in any way influenced by the form of antisyphilitic treatment which has been applied.

The Pupils in Association with Pain.

Joseph Byrne (*Journal of Nervous and Mental Diseases*, February, 1926) writes chiefly concerning the effects of visceral lesions upon the pupil dilating mechanism and specially studies what he calls the pseudo-paradoxical pupil phenomenon. This phenomenon he describes thus: "During or immediately after crushing one sciatic nerve (experimentally), the contralateral may be the larger pupil, but a few hours later, when the effects of the injury stimulus have passed off, the contralateral will be found to be the smaller pupil if the animal be absolutely quiet and untouched. On the slightest excitement, however, such as touching the animal, the contralateral becomes at once the larger pupil." Clinically, in man, he finds this phenomenon an accompaniment and reliable corroborative localizing sign of visceral disease and somatic lesions, for example gastric ulcer, ureteral calculus, brachial plexus injury, fractures of bones. He also thinks that it is a reliable objective sign of pain in the detection of malingering and ends by saying that the study of the pupils in association with referred and reflected pain and hyperalgesia should be made an integral part of all routine physical examinations.

Does Autonomous Meningococcal Meningitis Exist?

Ksawery Lewkowicz (*Journal of Neurology and Psychopathology*, May, 1925) has for long held that cerebro-spinal fever (meningitis) consists of a primary ventriculitis, the lesions of the meninges being secondary. He now proceeds to discuss "*cloisonnement*" or blockage of certain parts of the ventriculo-subarachnoid system, which according to his own observations are more than problematical. The effects of such blockage when complete are a disappearance of meningococci from the spinal fluid, an almost complete disappearance of pus cells and signs of spinal stasis (xanthochromia, high albumin and globulin content, increased coagulability). Turning to the matter of treatment, a case of complete blockage can claim no treatment with serum on its own account and in no other conditions will treatment of the ventricles alone suffice, because the serum of the ventricles will penetrate or travel just as do the meningococci. It is difficult to conceive how serum introduced spinally can have therapeutic action as long as the spinal space continues to receive from the ventricles a fluid sometimes abounding in meningococci. The absence of effect of the local treatment of the meningeal process is one most convincing proof that meningeal infection is never independent and autonomous, but always closely subordinate to the ventricular infection. The emerging therapeutic principle is simple. The author adds that subarachnoid or general infection being disregarded a sufficiently intense serum action in the ventricles should be brought about and maintained uninterruptedly for several days, until the stage of complete disappearance of meningococci, verified by examination of the ventricular fluid, is reached.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch of the British Medical Association was held in the Medical Society Hall, East Melbourne, on August 4, 1926, Dr. H. Douglas Stephens, the President, in the chair.

Members of the State Dental Society were present by invitation of the Council of the Branch.

Inflammatory Condition of the Mouth and Pharynx.

Dr. Raymond Hennessy delivered a clinical lecture entitled: "Acute Inflammatory Conditions of the Mouth and Pharynx" (see page 469).

Dr. S. A. Ewing, in opening the discussion, expressed the very great interest with which he had followed Dr. Hennessy's address. It was a pleasure to him to meet a newcomer in the field of surgery which had been his own life study, endowed with such sound anatomical and pathological equipment and the advantage of knowledge gained in the study of dentistry.

In the course of his practice he had always found it necessary to pay attention to the teeth. The healthy state and proper functioning of the teeth and the ring of lymphoid tissue in relation to the pharynx were of fundamental importance in the preservation of the general health and much disease was directly related to neglect of these structures.

He recalled that he had volunteered to read a paper at the Dental Congress in 1908 on the importance of the preservation of the temporary teeth in the development of the superior maxilla. On the retention of the teeth of the first dentition for the full period assigned by Nature depended the proper development of the palate and nasal passages. Failure in this respect involved the evils of mouth breathing and catarrhal disease and infection of the acessory sinuses of the nose.

In his discussion of alveolar abscess Dr. Hennessy had not mentioned that painful and often dangerous infection of the mandible which sometimes ensued on the collection of *débris* between the gum and the lower molar teeth and which might eventuate in cellulitis spreading to the tonsil and pharyngeal plexus of veins. He had seen a similar sequence of events after the extraction of lower molar teeth for which an injection of cocaine had been made as a local anæsthetic.

Dr. Hennessy had been very interesting in his remarks on unerupted teeth. He recollected removing an unerupted wisdom tooth fifteen years previously and could recall the interest with which he had noted that the tooth, though well developed, was semi-carious. He had formerly accepted the view that infective processes round unerupted teeth were due to the activities of bacteria carried to the spot by the blood stream, but he found the suggestion of Dr. Hennessy, that infection was from the mouth, along the original invagination of epithelium, very attractive.

Inflammatory processes of long duration at the apices of teeth even after their resolution by inducing sclerosis in which the terminal nerve filaments became involved, not infrequently resulted in neuralgic tic of varying degrees of severity. Extraction of the tooth might not be sufficient to relieve the pain which was dissipated only when the sclerotic tissue was thoroughly removed by curettage. He had observed the same feature in protracted mastoiditis. Pain might persist even after a perfect operation. In such circumstances X ray examination sometimes revealed sclerotic changes in the labyrinth and a labyrinthine operation would probably be necessary for the relief of the pain.

With reference to tonsillectomy Dr. Ewing said that he had always been conservative in considering removal of the tonsils after recent acute tonsillitis. Severe systemic infection, possibly rheumatic fever, might follow too early operation and he had made it a rule to allow at least one month to elapse after the resolution of the acute inflammation.

He had always been reluctant to remove tonsils during an attack of peritonsillitis. In dealing with hæmorrhage the difficulties were inreased and there was greater risk of infection through blood vessels and lymphatic channels.

In the diagnosis of quinsy the possibility of an acute inflammatory affection of the lingual tonsil was to be remembered. A useful clinical point of distinction between the two was that in faucial peritonsillar suppuration the patient could not open the mouth freely but could protrude the tongue. When the lingual tonsil was involved, the mouth could be opened easily and the difficulty lay in protruding the tongue.

Dr. Bryan Foster congratulated Dr. Hennessy on the manner in which he had dealt concisely and exhaustively with a large subject. His presentation was lucid and convincing and the greater part did not admit of controversy. To attempt discussion would result merely in repetition of Dr. Hennessy's statements.

He was attracted by the explanation offered by Dr. Hennessy of the manner in which dentigerous cysts became infected. Patients, thus affected, generally sought advice on account of pain resulting from infection of the cyst. He recollected one patient in whom antral suppuration was suspected. He had displayed swelling of the face and at intervals it was possible to express pus into the mouth. X ray examination had disclosed an unerupted canine tooth, lying tangentially at the lower margin of the orbit.

He held a different view from Dr. Hennessy regarding the best method of opening a peritonsillar abscess. He considered that in general such an abscess could be opened without pain with the aid of local anæsthesia. The method he adopted was to take a pledget of wool moistened with adrenalin solution on a carrier. A crystal of cocaine was picked up at the tip of the wool and held lightly for a minute or two on the point at which it was intended to make the incision. He preferred such a procedure to the administration of a general anæsthetic.

He had hoped that Dr. Hennessy would have discussed fuso-spirillary (Vincent's) infection. This bacterial combination was common as a cause of gingivitis and frequently underlay ulcerative processes in the tonsil. It was remarkable to observe that very frequently but little constitutional disturbance and pain were occasioned by large crateriform ulcers of this nature.

Fuso-spirillary infections had been particularly common among the troops in the great war. In civil practice he had been deeply impressed by the outcome of a Vincent infection in the case of two patients of whom he had intimate knowledge. Both had suffered from rheumatic fever in childhood and had been left with well compensated cardiac valvular lesions. Both had contracted Vincent's angina in the early "twenties" and within two years from that time both died with ulcerative endocarditis.

The question for consideration was whether the Vincent infection was in itself directly dangerous or whether it merely opened the door for the invasion of streptococci or other septic organisms.

Dr. Val MacDonald complimented Dr. Hennessy on his thorough exposition of the pathology of infective processes in the mouth and the manner in which he had discussed the clinical aspects from a dental point of view.

He wished to emphasize that dento-alveolar abscess which supervened on death of the pulp of the tooth was to be distinguished from acute pyorrhœal abscess. Pyorrhœal abscess, as in the case of dento-alveolar, occasioned much pain and tension and might even result in the formation of a sinus close to the apex of the tooth, but appropriate tests would show that the pulp was vital.

Dr. MacDonald referred to the claims of E. C. Rosenow in the elective localization at tooth apices of streptococci recovered originally from apical abscesses.

There had been much discussion of the propriety of extraction of the tooth as a means of securing drainage in dento-alveolar abscesses. If he could not satisfactorily evacuate the pus by incision, he had no hesitation in extracting the tooth. It was his practice to swab the socket with lysol as a means of preventing the systemic absorption of microorganisms. He made an exception, however, in regard to extraction in the case of unerupted, partially erupted or impacted third lower molar teeth. Here the lesion was not so much apical as in the soft tissues round the tooth and serious results might ensue from the backward spread of infection. But such teeth should be re-

moved in quiescence at the earliest opportunity, as they were a constant source of danger.

It was remarkable how long a chronic abscess might be present and the patient be unaware of it, even when it occasioned definite swelling.

He agreed with Dr. Hennessy's statement that suppuration in the maxillary antrum was in the vast majority of cases of nasal rather than dental origin. Underwood had recorded the passage of a probe through a pyorrhœal pocket along the side of the tooth into the maxillary antrum, but this indicated a very exceptional sequence of events.

With reference to infections of the submaxillary glands Dr. MacDonald said that he had seen suppurating submaxillary adenitis after influenza and suppuration in the parotid following the impaction of a fishbone in Stenson's duct. Salivary adenitis, however, was most frequently associated with the presence of a salivary calculus.

As illustrating the possible outcome of osteomyelitis, Dr. MacDonald exhibited two specimens of large sequestra. One of these had followed extraction of teeth under local anæsthesia in the presence of bad pyorrhœa—a dangerous field for injection. He considered that any gingivitis should be regarded as a potential pyorrhœa.

In discussing less common conditions within the month Dr. MacDonald referred to herpes. He described it as generally occurring on the hard palate, but he had recently seen an example on the soft palate and in that case the lesion was very severe and very distressing.

Small so-called "dyspeptic" ulcers at the junction of the cheek and gum were generally treated by the application of carbolic acid or silver nitrate, but he found that they responded very much better to hydrogen peroxide.

In conclusion Dr. MacDonald emphasized the value of meetings of the medical and dental professions and expressed the hope that there would be further opportunities for combined discussions.

MR. P. MATTHEWS, President of the State Dental Society of Victoria, officially expressed the appreciation of the dental profession of the invitation extended to them by the Victorian Branch of the British Medical Association.

He had been very pleased to hear Dr. Ewing refer to the importance of retaining the teeth of the first dentition. As dentists they were constantly at pains to instil this principle into parents, but their efforts were nullified when temporary teeth were allowed to get into such a condition that extraction was the only course open. Medical men could do much in impressing upon parents the necessity for periodical inspection by a dentist of the teeth of young children. Premature sacrifice of the temporary teeth was responsible for much malformation and malocclusion.

In much of their work as dentists they were on common ground with the medical profession and he hoped that combined meetings would be established as regular functions.

DR. W. KENT HUGHES said that he was pleased to hear Dr. Hennessy and Dr. MacDonald state that empyema of the maxillary antrum was seldom due to dental infection. Thirty years ago he had thrown doubt on the dental origin of suppuration in the antrum and had criticized the practice of attempting to drain the antrum *viâ* a tooth socket.

He was not in complete agreement with Dr. Hennessy's remarks on peritonsillar abscess. He was aware that various authorities, including Sir St. Clair Thomson had urged the danger of opening a peritonsillar abscess under general anæsthesia, but he had never seen a single accident connected with such a practice.

For twenty-five years he had advocated and practised enucleation of the tonsil as the best means of dealing with a peritonsillar abscess. Although Dr. Hennessy regarded this as bad surgery which invited a high mortality, in the large number of patients upon whom he had operated in this manner since 1901 he had never experienced anything in the nature of general or local trouble to deter him from what he regarded as a simple and obvious procedure. There had been only one fatality and that in a patient in whom septic laryngitis and œdema of the glottis necessitated tracheotomy after the inhalation of a few breaths of ether. It was subsequently ascertained that the complication of septic pericarditis also existed in this patient.

If the practice of incising the anterior pillar of the fauces were adopted with the intention of removing the tonsil at a subsequent date, within a very short time, a few weeks only, strong adhesions round the tonsil rendered its satisfactory removal difficult. His objection to incision of the faucial pillar was that drainage was frequently inadequate, the mere incision being insufficient to overcome the difficulty occasioned by pocketing of the pus.

Friability of the tonsil was the chief source of difficulty in enucleation of the tonsil in the presence of a peritonsillar abscess, but this should not occasion trouble to one practised in enucleation. The advantages of the procedure were that adequate drainage was assured and the quinsy completely dealt with at one operation. Whenever he suspected peritonsillar suppuration and he judged its appearance on the presence of œdema of the soft palate, he advised tonsillectomy by enucleation.

DR. H. FLECKER referred to recent work by Draper who claimed that incipient lesions of dental caries could be demonstrated by special radiological methods at a stage earlier than that at which they were detectable by clinical dental examination. He would like to hear an expression of opinion on this matter from the dentists present.

DR. W. A. MORRISON expressed his appreciation of the opportunity to attend a combined discussion of the medical and dental professions. He wished to endorse the remarks of Mr. Matthews regarding the very great interest and importance to be attached to such meetings.

He could not quite agree with Dr. Hennessy's representation of the tooth as "on all fours" with other dermal structures; the enamel only was epiblastic, the other structures of the tooth mesoblastic in origin.

He had been very much interested by Dr. Foster's reference to fuso-spirillary infection. His practice of making routine bacteriological examinations had impressed him with the high incidence of this infection in pronounced gingival and pericemental inflammation. This observation held even when suppuration was abundant.

Recognition of fuso-spirillary infection was of the greatest practical importance, because it failed to respond to ordinary antiseptics and was not influenced by hydrogen peroxide which might be expected to be effective in view of the fact that the fusiform bacilli and spirochætes were anaerobes. Fowler's solution and the wine of ipecacuanha were much more potent against the Vincent organisms.

DR. J. MONAHAN LEWIS supported Mr. Matthews and Dr. Morrison in their expressions of the appreciation of the State Dental Society of the goodwill shown them by the Victorian Branch of the British Medical Association.

In the wide range of his remarks Dr. Hennessy had not discussed focal infection and he confessed to a feeling of relief that he had not. They had heard so much about this subject. At the risk of being tedious he proposed to broach the subject of focal infection very briefly.

They were accustomed to think of bacterial infection in terms of a quantity factor and an intensity factor, but it was necessary to recognize in some patients an exalted sensitiveness to bacterial infection in the mouth which was not related to virulence. It was very remarkable how the general health often improved after the successful treatment of apparently trivial oral lesions. This had been pointed out by Dr. Val MacDonald some years previously.

DR. HENNESSY in reply expressed his thanks to those who had participated in the discussion. He had not anticipated that Dr. Kent Hughes would let him down so lightly, but he felt that he must reaffirm his view that enucleation of tonsils as a means of dealing with peritonsillar abscess was a hazardous procedure.

The view he had advanced of the mode of infection of unerupted teeth was an opinion only, but it seemed to him more reasonable than the theory of blood borne infection. It was a question on which he hoped to collect some evidence.

Library Facilities.

In accordance with notice of motion which he had given DR. JAMES BOOTH moved:

> That this Association request the public Library authorities to throw open to medical practitioners and students that portion of the Library dealing with the medical and allied sciences.

Dr. Booth said that under the present regulations while any specified book in the Library would be produced on request, it was not admissible to enter the medical section of the Library and examine the books. While he could understand such a restriction being placed on the general public, it was absurd that it should apply to medical men.

DR. A. V. M. ANDERSON seconded the motion which was carried unanimously.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at Geelong on July 31, 1926. The meeting which comprised an afternoon and evening session, was held at the invitation of the Southern Division. The chair was occupied by DR. R. G. MCPHEE, President of the Southern Division.

AFTERNOON SESSION.

The afternoon session, held at the Geelong Hospital, was devoted to clinical demonstrations by the Geelong members.

Abdominal Tumour.

DR. F. J. NEWMAN presented a woman, aged thirty-six years, upon whom he had performed an exploratory laparotomy.

For twelve months past the patient had experienced attacks of pain in the upper portion of the abdomen; the pain had gradually increased in severity and latterly the interval between attacks had been three or four weeks. The duration of the pain varied from a few hours to perhaps two days. The last attack only had been accompanied by vomiting. The pain did not appear to be related to the ingestion of food and had never been associated with jaundice.

By physical examination a large tumour, hard in consistence and of irregular edge, had been detected in the left hypochondrium. There was a degree of distension of the abdomen and the lower edge of the liver had been three centimetres below the costal margin.

On July 1, 1926, the leucocyte count had been 26,000 per cubic millimetre. A mild erythematous reaction, not in any way conclusive, constituted the only response to the Casoni intradermal test for hydatid. The blood serum had not reacted to the Wassermann test.

At the exploratory operation a distended stomach had presented, the viscus appearing to be forced forwards by a large mass situated immediately posterior to it. A large number of adhesions and small hard masses had been palpable near the splenic flexure of the colon. As the adhesions could not be separated and there was no means of mobilizing the tumour, the abdomen had been closed after removal of a small portion of the mass for microscopical examination.

Since the operation the patient had steadily improved. She had suffered from no pain or vomiting, was eating and sleeping well and gaining weight. All signs of the tumour had disappeared.

A report received from Professor MacCallum on the excised tissue stated that microscopical examination of the section revealed severe inflammatory reaction in fatty connective tissue. There was no recognizable tumour growth in any of the numerous sections cut.

Raynaud's Disease.

Dr. Newman showed a female patient who had injured her finger with a shuttle seven weeks previously. The skin was broken at the time of injury, but no bleeding had occurred. The patient had continued her work and on the following day a black spot had appeared near the site of injury. Dr. Newman had incised the finger and treatment by hot boracic lotion was carried out, but the finger had become black. Three weeks later the finger had become painful and pain had continued up till the time of demonstration. The patient had occasionally noticed that her hands became white and apparently bloodless when she washed them. Sometimes the opposite change took place and the skin became very red. Dr. Newman pointed out that gangrene of the finger involved the whole of the terminal and part of the second phalanx. A line of demarkation was forming and separation would eventually occur. It was likely that bone would have to be excised. Evidence of a low capillary circulation was present in other parts of the body. The systolic blood pressure was 98 and the diastolic pressure 80 millimetres of mercury. This was low for a girl of her age.

Tannic Acid Treatment of Burns.

DR. CLIVE JAMES showed a girl, aged thirteen years, whom he had treated very successfully for extensive burns of both legs. The burns were for the most part of the second degree, although there were limited areas of first and third degree burns.

A general anæsthetic had been administered for the purpose of puncturing blisters and cleansing the burned area with a weak solution of sodium bicarbonate, after which the limbs were dressed with cotton wool soaked in a 2·5% solution of tannic acid. On subsequent days the tannic acid dressings had been reapplied on gauze. At the end of a fortnight healing had been well advanced and at the date of the meeting, four and a half months after the accident, there was not the slightest tendency to contracture in the healed tissues.

Dr. James intimated that full details of the method of treatment would be found in *Surgery, Gynecology and Obstetrics*, August, 1925, and in the *Therapeutic Gazette* of September, 1925.

He had been delighted with the absence of scarring and had formed the very definite impression that the tannic acid dressings by inducing the formation of a superficial coagulum, minimized the absorption of protein disintegration products and the consequent serious constitutional effects of burns.

DR. S. C. FITZPATRICK asked Dr. James whether he had had experience of the method in infants or in burns of greater depth than the second degree. He found it difficult to conceive that coagulation could extend further than a certain limited depth and below this level there must be unaffected damaged tissue which would give rise to toxic absorption.

DR. H. DOUGLAS STEPHENS congratulated Dr. James on the excellent result he had achieved. The method impressed him as worthy of extended trial. The treatment of burns in infants was very tedious and the results often disappointing. He referred to a method of treatment in which dressings of 70% alcohol were applied. This method had given very satisfactory results in the hands of Mr. E. T. C. Milligan when he was a resident medical officer at the Children's Hospital, but a disadvantage was that each dressing necessitated the administration of an anæsthetic.

DR. JOHN KENNEDY expressed himself as very favourably impressed with the method demonstrated by Dr. James.

DR. JOHN KELLY referred to the disadvantages of picric acid dressings which sometimes resulted in severe dermatitis and even in picric acid poisoning.

DR. JAMES in reply said that he had never had occasion to treat an infant for burns, but he could see no reason why the tannic acid dressings should not be efficacious. He had never applied the method in burns of greater depths than the third degree. Greater penetration of the tannic acid could be obtained by using a 5% in place of the 2·5% solution, but it was to be recognized that there was a risk of sloughing, if the greater concentration were used. In the case of the girl he had shown, the coagulum had separated at the end of seventeen days, exposing healthy granulations and bluish epithelium. As compared with picric acid, tannic acid did not stain or cause dermatitis or produce symptoms of poisoning.

Mongolian Imbecility.

DR. MARY DE GARIS showed an infant in whom the diagnosis of mongolism was not open to question as the child was in all respects a typical example of this type

of mental deficiency. Her object in showing the baby, aged twelve months, was to record apparent progress since the inception of treatment by the administration of extract of pineal gland. The baby had been given thyreoid extract almost from birth, but at the age of ten months was still very backward and unable to sit up alone. At this period a course of pineal gland extract had been instituted and during the last three months the child had made unusual progress for an infant of this type.

DR. A. C. PEDLER who stated that he had some knowledge of this infant supported Dr. De Garis in her claim that the baby had advanced very much during the last three months.

DR. H. DOUGLAS STEPHENS said that he agreed with the diagnosis of mongolism in the case of the infant shown by Dr. De Garis. He would describe the child as a high grade mongol as he considered it more than usually bright. At the same time he was sceptical about the influence of the pineal gland. He had employed extract of pineal gland in mongolism, but had not been able to satisfy himself that it was any more efficacious than other gland extracts. It was to be remembered that mongoloid children varied very much in the degree of mental and physical development to which they attained, and it was therefore difficult to assess the value of any method of treatment. Over 50% of mongol imbeciles were affected by congenital cardiac lesions and approximately one-third of them displayed a degree of umbilical protrusion. The infant shown by Dr. De Garis exhibited more occipital development than was usually the case.

Carcinoma of Tongue.

DR. R. G. MCPHEE invited opinions regarding diagnosis in the case of a man, aged sixty-two years, who had presented himself with a hard infiltration on the left side of the base of the tongue. The surface was slightly ulcerated. The lesion had been present for ten months and was gradually progressing. It had occasioned the patient a good deal of pain in the tongue and in the region of the angle of the jaw on the left side. He gave no history of venereal disease and no positive result had been obtained as a result of serological investigation in this respect. The tongue was freely movable and there were no obviously enlarged glands.

In the discussion which ensued, the opinion generally was that diagnosis eventually must rest upon the pathological examination of a piece of tissue removed from the lesion.

DR. GORDON SHAW drew attention to the possibility of the process being tuberculous in nature.

Perforated Gastric Ulcer.

Dr. McPhee showed a girl, aged fourteen years, who had been admitted to hospital on June 28, 1926, with a history of the sudden onset of acute pain in the epigastrium. The pain had been persistent, but its severity had diminished. Later on pain had occurred in the right iliac fossa. The patient did not vomit and had not complained of nausea. There was history of previous indigestion. The patient had had tea and toast for breakfast, but nothing between that and the onset of pain at ten o'clock a.m. Her bowels had acted twenty-four hours before. When first seen at midday the child had looked very collapsed and ill.

The patient's father had suffered from perforated gastric ulcer eighteen months previously.

On admission the patient's tongue had been furred and moist. Her temperature had been normal and her pulse rate 110 and her respiratory rate 20 in the minute. The abdomen had moved fairly well with respiration. Tenderness had been elicited on palpation of the epigastrium and slight rigidity had been found on deep pressure. The pain had not been severe. In the right iliac fossa over McBurney's point some rigidity and tenderness, more pronounced on deep pressure, had been found. A low enema had been given with a good result. At 3.30 o'clock p.m. a slight rise in temperature and pulse rate had occurred and operation had been undertaken. The usual muscle splitting incision had been made over McBurney's point. Free fluid had been found in the peritoneal cavity. The appendix which was long and apparently normal, had been removed. The pelvis had been full of fluid and lymph and it was decided to explore the upper part of the abdomen. A perforation about four millimetres in diameter had been found on the lesser curvature of the stomach about three centimetres from the pylorus. The edges of the perforation had been sharply defined. The ulcer had been oversewn and invaginated, the tissues being very friable. The stomach had been returned and a midline stab incision made above the pubes. The abdominal cavity had been washed out with warm saline solution and a drainage tube had been inserted into the lower wounds. The upper wound had been sutured without drainage.

Dr. McPhee commented on the rarity of the condition in such a young patient.

Osteoma of the Femur.

Dr. McPhee also showed a young man, aged eighteen years, who was suffering from an osteoma of the lower part of the left femur. The mass had been present for about twelve months. He also showed a skiagram of the condition.

EVENING SESSION.

The evening session was held at the A.B.C. Café, after the visitors had been entertained at dinner by members of the Southern Division.

Muscles.

DR. J. E. PIPER read a paper entitled: "Muscles" (see page 472).

MR. FAY MACLURE, O.B.E., said that Dr. Piper had discussed the subject of muscular action in relation to joint injuries in a very interesting manner.

He was reminded of an experience during his war service. It had fallen to him to take charge of a soldier who had been wounded by fragments of shell in the knee joint and in the metatarsophalangeal joint of one of the toes. The injury to the knee joint was successfully treated by operation and appropriate splinting and actually did not occasion so much trouble as the apparently more trivial injury.

He applied the principles of muscle and joint fixation to the injured toe suspending the limb in an overhead frame and attaching an extension apparatus to the toe. He noted repeatedly that when the extension was released the state of the joint, as evidenced by inflammatory swelling and discharge, and the patient's general condition, as indicated by fever and pain, were affected adversely. Eventually the arthritis subsided after the constant maintenance of extension for several weeks.

He was convinced that injuries to joints complicated by suppurative arthritis required fixation of the joint and extension of the muscles which by their contraction were hammering on the damaged articular structures. Under such circumstances muscular action was injurious to the joint and the object of extension was to eliminate it.

MR. VICTOR HURLEY, C.M.G., remarked that Dr. Piper had covered a wide field in his paper.

It was often difficult to reconcile opposing points of view regarding the advisability of enforcing absolute rest and encouraging movement in the treatment of inflamed joints. While he subscribed to Mr. Maclure's view of the correct treatment of acutely inflamed joints, he considered at the same time that circumstances often arose under which it was advisable to restore the function of the joint as soon as possible. Much depended on the structure of the joint. In the shoulder, for example, the stability of the joint and the retention of the head of the humerus in the glenoid cavity were maintained by muscular action and were not dependent on the integrity of the ligaments. In the ankle joint on the other hand, the ligaments were all important and muscles played a very small part in ensuring the stability of the joint. The knee joint appeared to occupy an intermediate position, depending much on the tonicity of the quadriceps muscle and also on the integrity of the ligaments.

He had often been impressed with the rapidity with which wasting ensued in the quadriceps muscle after immobilization of the knee joint. Much significance had been attached to muscular wasting as an indication of serious

disease, such as tuberculosis, in the knee or hip joint, but the same degree of wasting occurred in simple traumatic synovitis after two or three weeks of immobilization of the knee joint.

From these considerations it followed that in the treatment of injury to the knee joint, while rest and splinting were necessary during the stage of acute inflammatory reaction, every endeavour should be made to maintain the tonicity of the supporting structures, especially the quadriceps muscle. Massage, exercises and electricity were employed with this object. If the patient should be allowed to walk while the quadriceps was still atonic and wasted, a very slight injury was prone to result in further breakdown of the joint.

It was undoubtedly difficult in many instances to arrive at the best decision between immobilization during the currency of acute inflammatory changes and the desirability of maintaining function in the joint. The conclusion should be influenced by the relative degree to which muscles and ligaments contributed to the stability of the joint.

It was perhaps unnecessary to remind them that active movements even in the presence of acute arthritis had been advocated and practised.

MEDICO-POLITICAL.

A meeting of the Victorian Branch of the British Medical Association was held at the A.B.C. Café, Geelong, on July 31, 1926. The meeting was held at the invitation of the South-Western Division and the chair was occupied by Dr. R. G. McPhee, the President of the Southern Division.

Hospital Practice.

Dr. A. E. Brown read a paper entitled: "The Position of the Public Hospitals in Relation to the Medical Profession" (see page 476).

Dr. J. Newman Morris said that he had no doubt that all would be interested in Dr. Brown's paper and would regard it as very timely. The questions raised had often been discussed by the Council of the Branch *in camera*, but open discussion of the hospital problem by the members of the Branch was very desirable and perhaps overdue.

Dr. Brown had criticised the Branch for holding back and not taking the initiative in an attempt to cope with the present unsatisfactory state of affairs with respect to public hospitals. While the Council welcomed criticism, it was only fair to point out that they had been by no means idle. During the last two or three years a great deal of consideration had been given to the elaboration of a hospital policy and to an endeavour to find a way out of the existing maze.

In the present anomalous state of affairs poor people and those who were content to be regarded as poor, received the best attention and were envied by the moderately well-to-do. The medical profession was deprived of legitimate work and legitimate income, a consideration which should be advanced, because it was in the interest of the community that they should have a contented medical profession.

As far as he could judge there was a growing feeling in favour of throwing open all charitable hospitals and converting them into "community" hospitals—a proposition itself beset with many difficulties.

He had always been under the impression that hospital abuse was a greater evil in the metropolis than in the country. Many patients from the country were to be found in the metropolitan clinics, but it was evident that country practitioners also had their troubles in connexion with the abuse of charitable hospitals. The views and suggestions of men in country practice, such as Dr. Brown had given them, were just what the Council wanted.

Dr. Morris referred to the movement for "standardization" of hospitals which had made much headway in the United States of America. As yet no "standards" had been formulated for Australia, but it was perhaps well to ask how many of the present private hospitals could be regarded as attaining a minimum standard.

One aspect of the hospital problem with which the Council had been called upon to deal, was that of contributory schemes. They had been asked to give their approval to a scheme by which a large and powerful trades union proposed to raise a sum of £20,000 *per annum* by weekly contributions from its members. This sum was to be distributed among the public hospitals and in return the members of the union were to be entitled to treatment at the public hospitals. No suggestion was made that the medical profession should be remunerated and it was seriously proposed that they would be well recompensed by the "experience" which the scheme would provide for them.

Approval had also been sought for other contributory schemes and it had even been proposed that contributions to the Lord Mayor's Fund should carry the right of treatment at the public hospitals.

In the city there was the ever present problem of the overflowing out-patient departments. The enormous numbers of patients in the out-patient departments had astonished Dr. Malcolm MacEachern who visited Victoria specifically to report on the hospital system at the invitation of the State Government.

It had been suggested that the out-patient departments should be converted into consultative clinics rather than clinics for treatment, that patients should be referred to them for specific examinations at the request of their medical men.

Another abuse which threatened to arise in connexion with public hospitals, was the practice which appeared to be growing among insurance companies of requesting information regarding X ray examinations from the hospitals. The Council had emphatically discountenanced such requests from wealthy organizations who were prepared to take advantage of the public hospitals and the honorary service rendered there by the radiographers.

In conclusion Dr. Morris said that the Council of the Victorian Branch had been endeavouring to have the question of a hospital policy for the medical profession made a Federal matter and through the Federal Committee to obtain a hospital policy uniform throughout the Commonwealth.

Dr. D. Rosenberg said that while Dr. Brown had accurately summarized the glaring defects in the existing hospital system he had not offered much in the way of constructive suggestion directed towards the very difficult problem of rectifying the evils. The whole question was causing much worry to the medical profession and he could assure them that so far from having escaped the attention of the Council of the Victorian Branch it had for a long time past occasioned that body grave concern.

They had tried very earnestly to bring their resolutions prominently before the Government and to get them incorporated in the projected legislation on intermediate hospitals.

He was not altogether in agreement with Dr. Brown in his advocacy of "community" hospitals, being afraid that these institutions could not be so readily controlled in Australia as in the United States. In America the system of community hospitals was based on rigid inquiry as to the means of patients, their statements being verified by workers in a well organized social service system. The problem was for the medical profession in Australia to free itself of a system already imposed upon it by public opinion and the generosity of the profession in the past. He was not sure that organizations such as the baby health centres and bush nursing should not be regarded as additional forms of hospitalization, the gradual extension of which was making large inroads on the legitimate field of the medical profession.

The cure of the evil of the existing hospital system was admittedly difficult and it behoved all medical men to give the problem their serious consideration and make their contributions towards a solution. Whether nationalization of the medical profession would solve the problem he could not say, but he was being forced to the conclusion that they were gradually being nationalized. The extent to which their remuneration would be adequate would depend on their own organization.

Dr. A. V. M. Anderson said that it was necessary to recognize that there had been a complete change in the attitude of the public towards the general hospitals as compared with their status for some years following their inception. Various factors, political and economic, had operated to produce this change of attitude, the desire to evade payment being perhaps one of the strongest. There was no doubt that many persons who attended public hospitals, could afford to pay medical fees; it was also true that public hospital attention was better than private. The cost of maintenance of the public hospitals had increased almost beyond belief, chiefly on account of the enormous increase in the numbers of patients attending them. Undoubtedly there should be more rigid inquiry as to the means of persons seeking treatment at the public hospitals.

He was of opinion that there should be more intermediate hospitals; there was an urgent necessity for a large intermediate hospital conducted on the lines of a "community" hospital. He thought a community hospital would go far to solve the hospital problem in centres such as Colac and Geelong. There appeared to be a tendency to mark time pending the receipt of Dr. MacEachern's report.

Dr. F. L. Davies said that while a community hospital would no doubt serve a centre such as Colac very well, there was a danger that the establishment of such would adversely affect the practices of medical men in the surrounding district.

Dr. R. N. S. Good said that he cordially approved Dr. Brown's paper. In his opinion Dr. Brown had struck just the right note. He had formerly practised in a country town of the same size as Colac and the difficulties there were just such as had been formulated by Dr. Brown. In the town in New South Wales in which he was formerly located there were two hospitals, one a public hospital with two private wards and the other a denominational hospital. Apart from these there was no equipped private hospital. There was no doubt that medical and surgical work could be carried out to best advantage in the public hospital and it was therefore in the patients' best interest to send them there. The medical men had succeeded in persuading the committee of management that after the private wards were filled, they might have patients who could afford to pay admitted to the public wards and charge them fees for medical attendance according to their means. In other words they converted the hospital for practical purposes into a "community" hospital.

Consideration of the questions involved in the provision of hospital treatment must start from the premise of the fundamental difference between metropolitan and country conditions. Generally speaking, country practitioners had a fairly accurate knowledge of the circumstances of patients seeking hospital treatment, but medical men in the metropolis frequently could not assess the financial position of their patients. In his opinion "community" hospitals were well adapted to the interests of patients and doctors alike in the country and no time should be lost in establishing them in appropriate centres. He did not think that the objection urged by Dr. Davies was valid; in a community hospital every doctor in the neighbourhood might attend his own patient and if he had not the necessary facilities for adequate treatment in any given instance, it was obligatory on him to recognize his limitations and send the patient to the nearest centre where such facilities were available.

Dr. Brown in reply to Dr. Morris and Dr. Rosenberg said that his criticism of the Branch in its relation to the hospital problem was not so much that it had been supine as that it had been content to adopt a watching attitude instead of taking the lead and endeavouring to direct public opinion. For example the Branch had not appeared as taking a prominent place in public discussions on intermediate hospitals. The bush nursing and baby health centre movements, designated by Dr. Rosenberg as other forms of hospitalization, had been originated and elaborated by agencies outside the medical profession and the point he wished to make, was that it would have been better if the Branch had taken the initiative and secured a guiding influence in these movements at their inception.

Dr. Brown said that he was strongly in favour of all existing public hospitals, at least in the country, being transformed into "community" hospitals. He could not see that such a reorganization would adversely affect medical men in outlying districts as feared by Dr. Davies.

NOMINATIONS AND ELECTIONS.

The undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

Ashton, Henry Dawson, M.B., Ch.M., 1925 (Univ. Sydney), The Hospital, Kenmore.
Geaney, Norman, M.B., Ch.M., 1926 (Univ. Sydney), Howard Street, Baroona, Brisbane.
Punch, Francis Michael Greenway, M.B., Ch.M., 1926 (Univ. Sydney), Julia Street, Ashfield.

The undermentioned has been elected a member of the South Australian Branch of the British Medical Association:

Morgan, Cecil Collard, M.B., Ch.M., 1924 (Univ. Sydney), Adelaide.

Medical Societies.

THE MELBOURNE PÆDIATRIC SOCIETY.

A meeting of the Melbourne Pædiatric Society was held at the Children's Hospital, Melbourne, on August 11, 1926, Dr. A. P. Derham, the President, in the chair. The meeting took the form of a series of clinical demonstrations.

Bifid Uterus.

Dr. H. Douglas Stephens showed a specimen consisting of portion of a bifid uterus removed at operation. The patient was a girl, aged twelve years and eight months, who had commenced menstruating five months previously. The periods had been regular every four weeks and lasted for seven days, being accompanied by severe pain and the passage of large, dark clots. Examination had revealed a tumour which was firm and boomerang shaped and occupied the left side of the pelvis and lower part of the abdomen. The cervix was tilted so that the *os* faced the left side. A probe passed along the cervical canal was directed towards the right pelvic brim. No passage could be found towards the left side. The condition had been diagnosed as bicornuate uterus with the left horn occluded.

Dr. Stephens said that laparotomy two and a half months previously had revealed a normal tube and ovary on the right side while on the left side the tumour could be felt on abdominal examination. This was semi-fluctuant and consisted of the occluded and dilated left horn of the uterus with a large distended tube placed almost vertically. The ovary had been situated on the posterior aspect of the mass which was also loosely adherent to the left lateral wall of the pelvis. This mass had separated easily from the pelvis and from the main portion of the uterus and was found to be filled with dark blood clots.

The patient made an uneventful recovery and had since menstruated regularly and painlessly, the period lasting for three days.

Foreign Body in the Alimentary Canal.

Dr. R. M. Downes presented a male infant, aged twelve months, who had swallowed an open safety pin eight months previously. Œsophagoscopy revealed that the pin had passed on from the œsophagus into the stomach. It had remained in this situation for six months. Later laparotomy had been performed, but no trace of the pin could be found in the stomach, small intestine or transverse colon.

An opaque meal was administered and a series of plates taken at varying intervals subsequently. From these it appeared most likely that the pin was still lodged in the duodenum. At no time had the child suffered any discomfort from the presence of the foreign body. Dr. Downes asked members for suggestions as to the location of the pin and the treatment that should be adopted.

DR. H. FLECKER suggested the administration of an opaque enema and then taking a stereoscopic picture. If further operation was contemplated he advised that it should be done under fluoroscopic control.

DR. MERVYN STEWART considered that nothing further should be done if the pin was located in the duodenum owing to the risk of producing a duodenal fistula.

DR. H. C. COLVILLE advocated opening the stomach as the routine treatment for open pins and similar foreign bodies lodged in this situation. He agreed that the pin was most likely to be in the duodenum as such articles could usually be easily palpated in the stomach.

Hydronephrosis.

Dr. Downes's second patient was a boy, aged five years, who had been admitted to hospital during a febrile attack with a provisional diagnosis of pneumonia. Later pus had been found in the urine and a tumour appeared in the upper part of the abdomen on the right side. The swelling was explored and had been found to be a large hydronephrotic sac containing thin purulent urine; the ureter was tortuous and dilated to the size of the colon.

Cystoscopic examination had shown the left ureter to be normal in appearance. Methylene blue solution injected into the right ureter had appeared through the wound in the lumbar region.

Sodium iodide solution had then been injected through the sinus into the loin and radiographic examination revealed very clearly the outline of the large hydronephrotic sac and the enormously dilated ureter.

Nine days before the meeting nephrectomy had been performed and the ureter removed to within five centimetres (two inches) of the bladder.

Splenic Anæmia.

DR. A. P. DERHAM showed a boy, aged thirteen and a half years, who had first been admitted to the Children's Hospital on May 8, 1921, suffering from gradually increasing swelling of abdomen of one week's duration. Diarrhœa had been present twenty-four hours. The stools had been pale yellowish. The child had had "snuffles" as an infant. Jaundice had been present at three years of age and off and on since. The family history did not suggest syphilis. On admission ascites and hydrocœle had been present. After tapping an enlarged (?) spleen had been felt, but the liver was not enlarged.

Blood examination had revealed that the corpuscular fragility was less than normal and the following figures were obtained from a blood count:

Red cells, 5,300,000 per cubic millimetre;
White cells, 10,600 per cubic millimetre;
Hæmoglobin value, 90%.

Slight anisocytosis and poikilocytosis and occasional polychromatophilia had been found.

The differential leucocyte count had been as follows:

Polymorhponuclear cells	77%.
Small lymphocytes	5%.
Large lymphocytes	3%.
Large mononuclear cells	3%.
Myelocytes	12%.
Eosinophile cells	0%.

Four normoblasts had been seen in counting three hundred leucocytes.

On May 29, 1921, splenectomy had been performed by Mr. Littlejohn after a blood transfusion. The operation was successfully performed and the pathologist's report on the spleen indicated a progressive cirrhosis with a prominent reticulum and vessels showing much endothelial activity.

The patient had been discharged much improved on July 28, 1921. At that time the liver was enlarged downwards two fingers' breadths and there was a small amount of ascites. Shortly afterwards he had been admitted to the Boys' Depôt, Royal Park, and had been under observation there ever since. The serum had not reacted to the Wassermann test.

On May 25, 1923, his corpuscular fragility had been normal. The red cells had numbered 3,350,000 and the white cells 18,800 per cubic millimetre. The hæmoglobin value was 50%. Of the white cells the polymorphonuclear cells were 40%, the neutrophile cells 38·5% and the eosinophile cells 1·5%. Poikilocytosis and anisocytosis had been present, but no nucleated red cells were seen. Transitional cells had numbered 2·5%, large lymphocytes 2·5% and small lymphocytes 55%.

In July, 1924, the patient had been shown to the members of the Pædiatric Society by Mr. Littlejohn. His liver had then been three fingers' breadth below the costal margin and he had some enlargement of the cervical glands.

On two occasions he had been given a series of injections of small doses of "Novarsenobenzol" into the buttock commencing with 0·2 gramme, but on each occasion he had developed pain and tenderness in the liver area and an increased degree of jaundice.

Dr. Derham said that apart from recurring attacks of liver congestion with jaundice which were relieved by small doses of calomel and a fat free diet, his general health was fairly good. He attended school, was in the fourth class and did quite advanced work in drawing, modelling and similar subjects. His mental age had been assessed at seven years. His liver was enlarged four fingers' breadth downwards and there was some ascites.

A recent blood count on August 10, 1926, yielded the following result:

Red cells, 4,450,000 per cubic millimetre.
Hæmoglobin value, 75%.
White cells, 10,800 per cubic millimetre.
Polymorphonuclear neutrophile cells, 44·5%.
Polymorphonuclear eosinophile cells, 7·5%.
Polymorphonuclear basophile cells, 4%.
Small lymphocytes, 38·5%.
Large lymphocytes, 4%.
Large mononuclear cells, 1·5%.

The red cells were normal as regards size, shape and staining reaction. The patient was shown to illustrate the value of splenectomy for splenic anæmia with better results than usual and also for an opinion as to prognosis and further treatment.

DR. J. W. GRIEVE stated that he had seen the patient when he was first admitted to hospital. The boy had then been in the third stage of splenic anæmia and was extremely ill with cirrhosis and ascites. His recovery after operation was remarkable. Dr. Grieve considered that the administration of arsenic was contraindicated owing to the hepatic condition.

Congenital Abnormality.

Dr. Derham's second patient was a female child, aged four years, suffering from difficult breathing dating from birth with occasional paroxysms resembling asthma. The lung signs during an acute attack were rather those of infralaryngeal obstruction than of true asthma. Mentally this patient manifested a paradoxical condition, having a remarkable memory for past and recent events and definite mental and physical precocity associated with just as definite signs of amentia or premature dementia. The child had been born at full time, after labour of five hours and with the aid of forceps. "Bronchitis" had been present at birth. At six weeks she had held her breath and "went black," she had had frequent similar 'turns" since then, a severe one at two years of age when she had fallen down and was unconscious for some hours, no attacks had occurred since her third birthday. She frequently got boils which did not develope fully. Her adenoids had been removed at two years of age. The family consisted of two children, the patient and a girl who was normal. The mother had had one miscarriage. There was no family history of fits or of mental trouble. A paternal aunt had chronic bronchitis as a child. The father had peculiar short, broad feet.

The patient's weight was nineteen kilograms (three stone one pound). Her height was ninety-four centimetres (three feet one and half inches). The circumference of her head was 48·7 centimetres (nineteen and a half inches). She had an adenoid facies, her general appearance suggested cretinism, increased subcutaneous tissue was present, her feet were broad and short with some *talipes equinus*, her hands were spade-shaped. Enlarged tonsils, some nasal obstruction and chronic nasal discharge were present. The teeth were carious and curiously shaped and spaced. The nipples and areolæ of the breasts were those of adolescence. The heart was normal. Signs in the lungs during an attack suggested emphysema. No thymic dulness was detected. Abdomen and genitals were normal. Hearing and vision seemed normal. Mentally her memory was phenomenal, she was fond of music and could sing many songs from beginning to end.

She had not learned control over bladder or bowels. She put everything into her mouth and ate most unsuitable things. She practised masturbation. She did not chew but sucked her food. She spoke in a drawling, deliberate way. She was not bad tempered, but was spiteful and cruel to other younger children and had to be constantly watched. She was constantly fingering or picking at the person holding her and was quite disobedient unless it pleased her to obey. Her parents had obtained the opinion of a great many doctors and thyreoid treatment had been tried without any improvement.

Dr. C. G. Godfrey had reported that her condition was unique in his experience and he considered her an example of premature adolescence, mental and physical, which would probably develope into *dementia præcox*.

Dr. Derham considered her condition to be one of congenital endocrine abnormality combining physical and mental precocity with definite stigmata of amentia. He thought that for practical purposes it would be justifiable to admit her to a mental hospital where intensive thyreoid treatment could be tried. He asked for the opinion of members, particularly as to diagnosis and as to whether thymus administration was indicated or not. The result of a Wassermann test was not available. Dr. Derham hoped to have her mentally tested in the psychiatric clinic.

Dr. Douglas Galbraith said that he had seen the child in several of the original attacks. There was urgent dyspnœa of the laryngeal type. The condition clinically was regarded as thymic asthma. The mentality at that time had been thought to be merely retarded, but he considered that the child was a dement and that the prognosis was very bad. He had seen several members of the family on the maternal side and all had exhibited a decidedly neurotic tendency.

Lipodystrophia.

Dr. J. W. Grieve showed a male patient, aged eight years, who had suffered from pronounced wasting of the fatty tissue of the face and upper part of the thoracic region during the previous twelve months. Photographs of the patient at the ages of one year and four and a half years revealed no abnormality at that time.

Dr. Grieve regarded the boy as an example of the condition known as lipodystrophia. The child had first been referred to hospital as probably suffering from a tuberculous condition; this was a common fallacy with regard to lipodystrophia. All the investigations in this direction yielded no information and there was no history of any family predisposition to tuberculosis.

Dr. Robert Southby agreed that there was no doubt as to the diagnosis and quoted several cases recorded in the literature. Subcutaneous injections of liquid paraffin had been tried in the treatment of the condition, but resulted in only temporary improvement in the appearance of the patient. One observer had published two cases in which complete recovery had occurred after prolonged administration of capsules containing: "Cerebrin" 0·12 gramme (two grains), strychnine sulphate 0·0012 gramme (one-forty-eighth grain), parathyreoid extract 0·003 gramme (one-twentieth grain), pituitary (whole gland) extract 0·06 gramme (one grain), potassium citrate 0·15 gramme (two and a half grains).

Dr. A. P. Derham considered that an endocrine disturbance was probably the underlying cause of the condition.

Optic Atrophy.

Dr. Jean Macnamara showed a girl, aged thirteen years, suffering from optic atrophy of doubtful origin.

The patient had first been seen in January, 1926, on account of headaches and some difficulty in seeing the blackboard at school. On examination the vision in the left eye had been reported as normal, but on the right side the optic disc manifested atrophy of a secondary type, the veins being full and the arteries small. Since this time she had frequently complained of pain when attempting any school work, but repeated ophthalmoscopic examinations had shown no further changes in either optic disc. Examination of the urine had revealed nothing abnormal. The blood and cerebro-spinal fluid had both failed to react to the Wassermann test. There was no increase of cells or of globulin in the cerebro-spinal fluid.

The mother and the remaining children in the family all failed to react to the Wassermann test.

Three months previously the patient had become irritable and emotional and suffered from a certain degree of precipitant micturition and some nocturnal enuresis, but this was only temporary.

No alteration in speech had been noticed.

No pathological changes were indicated by X ray examination of the skull.

Dr. Macnamara asked for an expression of opinion as to the diagnosis and also as to the advisability of continuing school lessons.

Dr. H. Flecker suggested that pneumo-ventriculography might assist in excluding the possibility of cerebral tumour.

Dr. Douglas Galbraith mentioned the likelihood of early disseminated sclerosis and suggested plotting the gold curve of the cerebro-spinal fluid.

Asymmetry of the Skull.

Dr. Jean Macnamara's second patient was a male infant, aged nine months, showing asymmetry of the skull. The child had been born at full time after an easy non-instrumental labour and the head had apparently been quite normal until three months previously. Since that time the left side of the head had become progressively large. The fontanelle was completely closed.

Dr. Macnamara was anxious to know whether the condition would continue to progress.

Dr. H. C. Colville said that he had seen a similar condition in an older child associated with unilateral hydrocephalus, but unaccompanied by any ill-effects.

Dr. A. P. Derham had also seen a similar case in which the mentality was not impaired.

Lesion of the Liver.

Dr. J. Alexander presented a boy, aged nine years, who had suffered from an enlargement of the liver for the previous three years. The liver was firm and irregularly lobulated and the spleen was just palpable. X ray examination confirmed these findings, but revealed no displacement of the diaphragm. At no time had there been jaundice, ascites or œdema or any urticaria. The blood picture was normal except for the presence of 3·5% eosinophile cells. No reaction had been obtained to either the Wassermann test or the hydatid complement fixation test. The Casoni test also yielded no reaction.

Dr. Mervyn Scott considered hydatid disease as the most likely condition in spite of the normal laboratory findings. He would recommend an exploratory operation.

Dr. R. M. Downes agreed that a laparotomy should be performed.

Dr. J. W. Grieve recalled a similar patient who had been operated upon by Mr. Hamilton Russell some years previously, the condition had proved to be a congenital cyst of the liver.

Pes Cavus.

Dr. Mervyn Stewart demonstrated a female patient, aged ten years, with primary idiopathic *pes cavus* which he had treated by operation on both feet. The result was excellent. The operation which was a combination of the Steindler operation and excision of the plantar fascia as performed by Mr. Kent Hughes, was described in detail.

DR. A. P. DERHAM inquired as to the prognosis with regard to the possibility of recurrence of the condition after operation.

In reply to Dr. Derham's question, Dr. Stewart said he had seen several patients three years after this operation and the results were quite good and there had been no return of the deformity.

Spastic Paraplegia.

Dr. Mervyn Stewart's second patient was a girl, aged thirteen years, with spastic paraplegia which had been treated by division of the adductor muscles of the thigh on both sides accompanied by a modified Stoeffel operation.

Since the operation the extreme degree of adduction had been relieved thus eliminating the severe "scissor leg" deformity and the patient could walk with comparative comfort, although the legs were still spastic.

Dr. Stewart asked for an expression of opinion as to the advisability of performing a Royle operation, as the child's mentality was perfectly normal.

DR. R. M. DOWNES considered that this patient would be an ideal one for ramisection. He had seen several children, all of very poor mentality, who had been subjected to the operation, and in each case there had been a slight but definite improvement.

Medical Appointments.

Dr. Denis Francis Barrett has been appointed Government Medical Officer at Blair Athol, Queensland.

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Dr. Albert Stephen Furness (B.M.A.) has been appointed Second Assistant Medical Superintendent, Hospital for the Insane, Goodna, Queensland.

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Dr. William Christie (B.M.A.) has been appointed Medical Inspector of Schools, Education Department, Class I., South Australia.

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Dr. Thomas A. B. Harris (B.M.A.) has been appointed Certifying Medical Practitioner at Ruthergien, Victoria.

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Dr. A. L. J. Peters (B.M.A.) has been appointed Certifying Medical Practitioner at Alexandra, Victoria.

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Dr. James Sydney Alexander Rogers (B.M.A.) has been papointed Acting Medical Superintendent, Hospital for the Insane, Beechworth, Victoria.

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Dr. Keith Roswald McGregor (B.M.A.) has been appointed Government Medical Officer at Beenleigh, Queensland.

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Dr. Alexander Craigievar Mathew (B.M.A.) has been appointed Certifying Medical Practitioner at Brunswick and Coburg, Victoria, under the provision of the *Workers' Compensation Acts.*

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Dr. Lindsay B. A. Inglis (B.M.A.) has been appointed Public Vaccinator at Kew, Victoria.

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Dr. Geoffrey A. Cook (B.M.A.) has been appointed Public Vaccinator at Rokewood, Victoria.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants *locum tenentes* sought, etc., see "Advertiser," page xx.

ISISFORD DISTRICT HOSPITAL, QUEENSLAND: Medical Officer.

MOUNT MULLIGAN DISTRICT HOSPITAL, QUEENSLAND: Medical Officer.

ROYAL AUSTRALIAN AIR FORCE: Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

OCT. 12.—Tasmanian Branch, B.M.A.: Branch.
OCT. 12.—Victorian Branch, B.M.A.: Council.
OCT. 12.—New South Wales Branch, B.M.A.: Ethics Committee.
OCT. 12.—Section of Medicine, New South Wales Branch, B.M.A.
OCT. 13.—Northern Suburbs Medical Association, New South Wales.
OCT. 14.—New South Wales Branch, B.M.A.: Clinical Meeting.
OCT. 18.—New South Wales Branch, B.M.A.: Organization and Science Committee.
OCT. 19.—Tasmanian Branch, B.M.A.: Council.
OCT. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
OCT. 20.—Western Australian Branch, B.M.A.: Branch.
OCT. 20.—Central Northern Medical Association, New South Wales.
OCT. 21.—Section of Neurology and Psychiatry, New South Wales.
OCT. 22.—Queensland Branch, B.M.A.: Council.
OCT. 23.—Illawarra Suburbs Medical Association, New South Wales.

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